

HCD-RG490/RG590

SERVICE MANUAL

Ver. 1.0 2006.02

UK Model
HCD-RG590

E Model
HCD-RG490/RG590



Photo: HCD-RG590 (Except UK model)

- HCD-RG490 is the amplifier, CD player, tape deck and tuner section in MHC-RG490S.
- HCD-RG590 is the amplifier, CD player, tape deck and tuner section in MHC-RG590S.

CD Section	Model Name Using Similar Mechanism	HCD-RG270
	CD Mechanism Type	CDM74KF-K6BD83S (Except Mexican model)/ CDM74KF-F1BD84 (Mexican model)
	Base Unit Name	BU-K6BD83S-WOD (Except Mexican model)/ BU-F1BD84 (Mexican model)
	Optical Pick-up Block Name	KSM-213DCP (Except Mexican model)/ KSM-215DCP (Mexican model)
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CWN42FF609

SPECIFICATIONS

Amplifier section

European model:
HCD-RG590

Front speaker

DIN power output (rated): 110 + 110 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output
(reference): 145 + 145 watts (6 ohms at
1 kHz, 10% THD)
Music power output (reference): 290 +
290 watts (6 ohms at 1 kHz, 10% THD)

Subwoofer

DIN power output (rated): 130 watts
(6 ohms at 80 Hz, DIN)
Continuous RMS power output
(reference): 170 watts (6 ohms at 80 Hz,
10% THD)
Music power output (reference): 340 watts
(6 ohms at 80 Hz, 10% THD)

Other models:

HCD-RG590

The following are measured at AC 220 V, 50 Hz
(Argentine model), AC 120 or 127 V, 60 Hz
(Mexican model), AC 120, 220 or 240 V,
50/60 Hz (other models)

Front speaker:

DIN power output (rated): 110 + 110 W
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference):
145 + 145 W (6 ohms at 1 kHz, 10% THD)

Subwoofer:

DIN power output (rated): 130 W
(6 ohms at 80 Hz, DIN)
Continuous RMS power output (reference):
170 W (6 ohms at 80 Hz, 10% THD)

HCD-RG490

Front speaker

The following are measured at AC 120, 127, 220,
240 V 50/60 Hz

DIN power output (rated): 95 + 95 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output
(reference): 125 + 125 watts (6 ohms at
1 kHz, 10% THD)

Subwoofer

DIN power output (rated): 120 watts
(6 ohms at 80 Hz, DIN)
Continuous RMS power output
(reference): 150 watts (6 ohms at 80 Hz,
10% THD)

Inputs:

AUDIO IN (stereo mini jack): voltage
250 mV, impedance 47 kilohms
MIC (phone jack) (Latin American
model only): sensitivity 1 mV, impedance
10 kilohms

Outputs:

PHONES (stereo mini jack): accepts
headphones of 8 ohms or more
VIDEO OUT (phono jack) (Mexican
model only): max. output level 1Vp-
p, unbalanced, Sync negative, load
impedance 75 ohms
SPEAKER: accepts impedance of 6 to
16 ohms
SUBWOOFER OUT: accepts
impedance of 6 to 16 ohms

– Continued on next page –

COMPACT DISC DECK RECEIVER

9-887-053-01
2006B05-1
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Sony Corporation
Personal Audio Division
Published by Sony Techno Create Corporation

SONY®

CD player section

System: Compact disc and digital audio system

Laser Diode Properties

Emission duration: continuous

Laser Output*: Less than 44.6μW

*This output is the value measurement at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7mm aperture.

Frequency response: 20 Hz – 20 kHz

Signal-to-noise ratio: More than 90 dB

Dynamic range: More than 90 dB

Tape deck section

Recording system: 4-track 2-channel, stereo

Frequency response: 50 – 13,000 Hz (±3 dB), using Sony TYPE I cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section:

Tuning range

87.5 – 108.0 MHz (50 kHz step)

Antenna: FM lead antenna

Antenna terminals: 75 ohms unbalanced

Intermediate frequency: 10.7 MHz

AM tuner section:

Tuning range

Pan-American model:

530 – 1,710 kHz (with 10 kHz tuning interval)

531 – 1,710 kHz (with 9 kHz tuning interval)

European model:

531 – 1,602 kHz (with 9 kHz tuning interval)

Other models:

530 – 1,710 kHz (with 10 kHz tuning interval)

531 – 1,602 kHz (with 9 kHz tuning interval)

Antenna: AM loop antenna, external antenna terminal

Intermediate frequency: 450 kHz

General

Power requirements

European model: AC 230 V, 50/60 Hz

Mexican model: AC 127 V, 60 Hz

Argentine model: AC 220 V, 50/60 Hz

Other models: AC 120, 220 or 230 – 240 V, 50/60 Hz, Adjustable with voltage selector

Power consumption

European model:

HCD-RG590: 205 watts

Mexican model:

HCD-RG490: 240 watts

Other models:

HCD-RG590: 205 watts

HCD-RG490: 245 watts

Dimensions (w/h/d) (excl. speakers): Approx. 280 × 328 × 412.3 mm

Mass (excl. speakers)

European model:

HCD-RG590: Approx. 9.5 kg

Other models:

HCD-RG590: Approx. 9.7 kg

HCD-RG490: Approx. 9.5 kg

Design and specifications are subject to change without notice.

Notes on chip component replacement

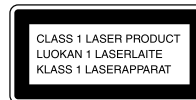
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This appliance is classified as a CLASS 1 LASER product. This marking is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

1. SERVICING NOTES	4	7-20. Schematic Diagram – MAIN Board (3/3) (RG490: MX/RG590: MX models) –	43
2. GENERAL	5	7-21. Printed Wiring Board – MIC. AUX. HP Board –	44
3. DISASSEMBLY		7-22. Schematic Diagram – MIC. AUX. HP Board –	45
3-1. Disassembly Flow	8	7-23. Printed Wiring Board – POWER Board (RG490) –	46
3-2. Case (Side-L), Case (Side-R)	9	7-24. Schematic Diagram – POWER Board (RG490) –	47
3-3. Case (Top)	9	7-25. Printed Wiring Board – POWER Board (RG590) –	48
3-4. LID (CD)	10	7-26. Schematic Diagram – POWER Board (RG590) –	49
3-5. CD Mechanism Deck (CDM74KF-K6BD83S: Except Mexican model) (CDM74KF-F1BD84: Mexican model)	10	7-27. Printed Wiring Boards – SUB WOOFER Section –	50
3-6. Front Panel Block	11	7-28. Schematic Diagram – SUB WOOFER Section –	51
3-7. Mecha Deck (CWN42FF609)	11	7-29. Printed Wiring Boards – CD-G Section (RG490: MX/RG590: MX models) –	52
3-8. Back Panel Section	12	7-30. Schematic Diagram – CD-G Section (RG490: MX/RG590: MX models) –	53
3-9. MAIN Board	12	7-31. Printed Wiring Board – PANEL Board –	54
3-10. BD Board (Mexican model), CD Board (Except Mexican model)	13	7-32. Printed Wiring Boards – KEY Section –	55
3-11. DRIVE Board, SW Board	13	7-33. Schematic Diagram – PANEL/KEY Section –	56
3-12. Optical Pick-up Block (KSM-213DCP: Except Mexican model) (KSM-215DCP: Mexican model)	14	7-34. Printed Wiring Board – TRANSFORMER Board (RG490) –	58
3-13. SENSOR Board	14	7-35. Schematic Diagram – TRANSFORMER Board (RG490) –	59
3-14. MOTOR (TB) Board	15	7-36. Printed Wiring Board – TRANSFORMER Board (RG590) –	60
3-15. MOTOR (LD) Board	15	7-37. Schematic Diagram – TRANSFORMER Board (RG590) –	61
4. TEST MODE	16	8. EXPLODED VIEWS	
5. MECHANICAL ADJUSTMENTS	19	8-1. Case Section	78
6. ELECTRICAL ADJUSTMENTS	20	8-2. PANEL Board Section	79
7. DIAGRAMS		8-3. LID (Top) Section	80
7-1. Block Diagram – CD SERVO Section –	23	8-4. Front Panel Section	81
7-2. Block Diagram – MAIN Section –	24	8-5. MAIN Board Section	82
7-3. Block Diagram – AMP/VIDEO Section –	25	8-6. POWER Board, SUB WOOFER Board Section	83
7-4. Block Diagram – PANEL/POWER SUPPLY Section –	26	8-7. Chassis Section	84
7-5. Printed Wiring Board – CD Board (Except RG490: MX/RG590: MX models) –	28	8-8. CD Mechanism Deck Section-1 (CDM74KF-K6BD83S) (Except Mexican model)/ (CDM74KF-F1BD84) (Mexican model)	85
7-6. Schematic Diagram – CD Board (Except RG490: MX/RG590: MX models) –	29	8-9. CD Mechanism Deck Section-2 (CDM74KF-K6BD83S) (Except Mexican model)/ (CDM74KF-F1BD84) (Mexican model)	86
7-7. Printed Wiring Board – BD Board (RG490: MX/RG590: MX models) –	30	9. ELECTRICAL PARTS LIST	87
7-8. Schematic Diagram – BD Board (RG490: MX/RG590: MX models) –	31	• Abbreviation MX: Mexican model	
7-9. Printed Wiring Boards – CHANGER Section –	32		
7-10. Schematic Diagram – CHANGER Section –	33		
7-11. Printed Wiring Board – DECK Board –	34		
7-12. Schematic Diagram – DECK Board –	35		
7-13. Printed Wiring Board – MAIN Board (Except RG490: MX/RG590: MX models) –	36		
7-14. Schematic Diagram – MAIN Board (1/3) (Except RG490: MX/RG590: MX models) –	37		
7-15. Schematic Diagram – MAIN Board (2/3) (Except RG490: MX/RG590: MX models) –	38		
7-16. Schematic Diagram – MAIN Board (3/3) (Except RG490: MX/RG590: MX models) –	39		
7-17. Printed Wiring Board – MAIN Board (RG490: MX/RG590: MX models) –	40		
7-18. Schematic Diagram – MAIN Board (1/3) (RG490: MX/RG590: MX models) –	41		
7-19. Schematic Diagram – MAIN Board (2/3) (RG490: MX/RG590: MX models) –	42		

SECTION 1

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)



LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350 °C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

RELEASING THE ANTITHEFT LOCK

The disc table lock function for the antitheft of a demonstration disc in the store is equipped.

Releasing Procedure :

- Press the button to turn the power on.
- While pressing the button, press the button until "UNLOCKED" displayed on the fluorescent indicator tube (around 5 seconds).

Note: When "LOCKED" is displayed, the antitheft lock is not released by turning power on/off with the button.

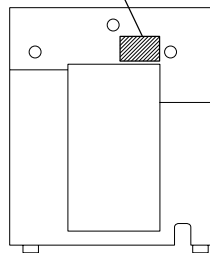
NOTES ON REPLACEMENT OF IC901 ON THE MAIN BOARD

IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

MODEL IDENTIFICATION

– Back Panel –

Model number label



Label indication	Model
2-664-523-0 CED	RG590: UK
2-664-524-0 E3	RG590: E3
2-664-527-0 E51	RG590: E51
2-664-528-0 AR	RG590: AR
2-664-529-0 MX4	RG590: MX
2-664-535-0 E3	RG490: E3
2-664-538-0 E51	RG490: E51
2-664-540-0 MX4	RG490: MX
2-680-569-0 E2	RG590: E2
2-680-570-0 E2	RG490: E2

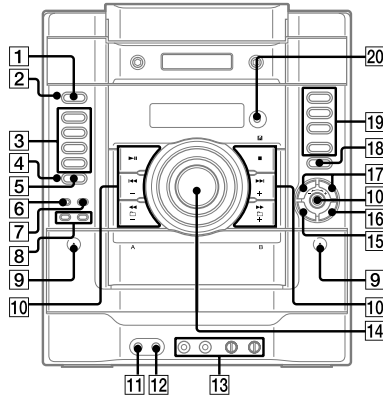
- Abbreviation
 - AR : Argentina model
 - E2 : 120V AC area in E model
 - E3 : 240V AC area in E model
 - E51 : Chilean and Peruvian models
 - MX : Mexican model

SECTION 2 GENERAL

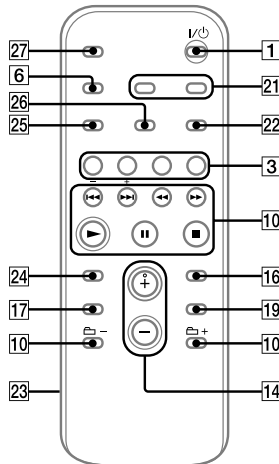
HCD-RG490/RG590: UK model

Guide to parts and controls

Unit



Remote



This manual mainly explains operations using the remote, but the same operations can also be performed using the buttons on the unit having the same or similar names.

- 1** I/⏻ (power) button
Press to turn on the system.

- 2** STANDBY indicator
Lights up when the system is turned off.

- 3** CD button
Press to select the CD function.

TUNER/BAND button
Press to select the TUNER function. Press to select FM or AM reception mode.

Unit: TAPE A/B button
Remote: TAPE button
Press to select the TAPE function. Press to select TAPE A or TAPE B.

AUDIO IN button
Press to select the AUDIO IN function.

FUNCTION button
Press to select the function.

- 4** SUBWOOFER indicator
Lights up when the subwoofer is turned on.

- 5** SUBWOOFER button
Press to turn on and off the subwoofer.

- 6** Mexican model:
Unit: KARAOKE button
Press to activate the karaoke mode.
Remote: DISPLAY button
Press to change the information on the display.

Other models:
DISPLAY button
Press to change the information on the display.

- 7** ILLUMINATION button
Press to change the illumination pattern around the VOLUME control **14**.

- 8** Buttons for synchro recording or manual recording
REC PAUSE/START button,
CD SYNC button
Press to record on a tape.

- 9** PUSH ▲
Press to insert or eject a tape.

- 10** Playback buttons
Unit: ►► (play/pause) button
Remote: ►► (play) button,
►► (pause) button
Press to start or pause playback.

- (stop) button**
Press to stop playback.

- ◀◀/▶▶ (go back/go forward)**
Press to select a track or file.

- Unit: TUNING +/- button**
Remote: +/- (tuning) button
Press to tune in the desired station.

- 📁 +/- (select folder) button**
Press to select a folder on an MP3 disc.

- ◀◀/▶▶ (rewind/fast forward) button**
Press to find a point in a track or file.

- MULTI JOG dial (◀◀/▶▶ (go back/go forward), +/- (tuning))**
Turn to select a track or file. Turn to tune in the desired station. (Same as the ◀◀/▶▶, +/- buttons on the remote)

- 11** PHONES jack
Connect the headphones.

- 12** AUDIO IN jack
Connect to an audio component.

- 13** Latin American model only:
MIC jack
Connect the microphone. Mexican model comes with 2 microphone jacks.
MIC LEVEL
Turn to adjust the microphone volume.

Mexican model only:
ECHO LEVEL
Turn to adjust the echo level.

- 14** Unit: VOLUME control
Turn to adjust the volume.

Remote: VOLUME +/- button
Press to adjust the volume.

- 15** EQ BAND button
Press to select the frequency band.

- 16** ENTER button
Press to enter the settings.

- 17** Sound buttons
Unit: GROOVE button,
SURROUND button
Remote: EQ button
Press to select the sound.

- 18** ⏮ (open/close) button
Press to insert and eject a disc.

- 19** DISC 1 – 3 button
Press to select a disc. Press to switch to the CD function from other function.

Unit: DISC SKIP/EX-CHANGE button
Press to select a disc. Press to exchange a disc while playing.
Remote: DISC SKIP button
Press to select a disc.

- 20** Remote sensor

- 21** CLOCK/TIMER SELECT button
CLOCK/TIMER SET button
Press to set the clock and the timers.

- 22** REPEAT/FM MODE button
Press to listen to a disc, a single track or file repeatedly. Press to select the FM reception mode (monaural or stereo).

- 23** Battery compartment lid

- 24** CLEAR button
Press to delete a pre-programmed track.

- 25** TUNER MEMORY button
Press to preset the radio station.

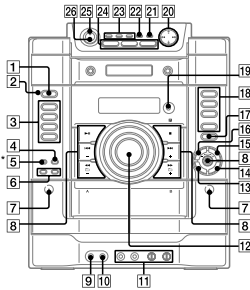
- 26** PLAY MODE/TUNING MODE button
Press to select the play mode of a CD, MP3 or tape.
Press to select the tuning mode.

- 27** SLEEP button
Press to set the Sleep Timer.

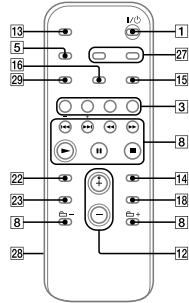
HCD-RG490/RG590

EXCEPT HCD-RG490/RG590: UK model

Basic Operations



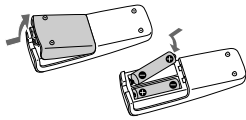
* Mexican model: KARAOKE button
Other models: DISPLAY button



Before using the system

To use the remote

Slide and remove the battery compartment lid 28, and insert the two supplied R6 (size AA) batteries, side first, matching the polarities shown below.



Notes on using the remote

- With normal use, the batteries should last for about six months.
- Do not mix an old battery with a new one or mix different types of batteries.
- If you do not use the remote for a long period of time, remove the batteries to avoid damage from battery leakage and corrosion.

To set the clock

1 Turn on the system.

Press I/O (power) 1.

2 Select the clock set mode.

Press CLOCK/TIMER SET 27 on the remote. If the current mode appears on the display, press 8 repeatedly to select "CLOCK SET" and then press ENTER 14.

3 Set the time.

Press 8 repeatedly to set the hour, and then press ENTER 14. Use the same procedure to set the minutes.

When you turn off the system after setting the clock, the clock display appears instead of the demonstration display.

The clock settings are lost when you disconnect the power cord or if a power failure occurs.

Selecting a music source

Press the following buttons (or press FUNCTION on the remote repeatedly).

To select	Press
CD	CD 3.
Tuner	TUNER/BAND 3.
Tape (deck A or B)	TAPE on the remote (or TAPE A/B on the unit) 3.
Component (connected using an audio cord)	AUDIO IN 3 on the unit.

Adjusting the sound

To adjust the volume

Press VOLUME +/- on the remote (or turn the VOLUME control on the unit) 12.

To add a sound effect

To	Press
Reinforce the bass and create a more powerful sound	GROOVE 23 on the unit repeatedly until "GROOVE" appears.
Set the surround effect	SURROUND 23 on the unit repeatedly until "SURR" appears.
Select the preset sound effect	EQ on the remote (or PRESET EQ on the unit) 23 repeatedly. To cancel, press EQ on the remote (or PRESET EQ on the unit) 23 repeatedly until "EQ OFF" appears.

To turn on the subwoofer

Press SUBWOOFER 28 on the unit repeatedly until "SUB ON" appears. The SUBWOOFER indicator 28 on the unit lights up. If you later disconnect the subwoofer, repeat the procedure until "SUB OFF" appears. The volume of the subwoofer is linked to the front speakers.

Playing a CD/CD-G/MP3 disc

CD-G discs are supported only on the Mexican model.

1 Select the CD function.

Press CD 3.

2 Place a disc.

Press (open/close) 17 on the unit, and place a disc with the label side up on the disc tray.



To insert additional discs, press DISC SKIP 18 to rotate the disc tray.

To close the disc tray, press (open/close) 17 on the unit again.

Do not force the disc tray closed with your finger, as this may damage the unit.

3 Start playback.

Press (play) on the remote (or (play/pause) on the unit) 8.

To	Press
Pause playback	(pause) on the remote (or (play/pause) on the unit) 8. To resume play, press the button again.
Stop playback	(stop) 8.
Select a folder on an MP3 disc	+/- (select folder) 8.
Select a track or file	(go back/go forward) (or turn the MULTI JOG dial on the unit) 8.
Find a point in a track or file (except for CD-G discs)	Hold down (rewind/fast forward) 8 during playback, and release the button at the desired point.
Select Repeat Play	REPEAT 19 repeatedly until "REP" or "REP1" appears.
Select a disc	DISC SKIP (or DISC 1 - 3 on the unit) 18 in stop mode.
Switch to CD function from other function	DISC 1 - 3 18 on the unit (Automatic Source Selection).
Exchange other discs while playing	EX-CHANGE 18 on the unit.

To change the play mode

Press PLAY MODE 16 repeatedly while the player is stopped. You can select normal play ("ALL DISCS" for all discs or "1 DISC" for a disc or for all MP3 files in the folder on the disc), shuffle play ("ALL DISCS SHUF" or "1 DISC SHUF" or SHUF*), or program play ("PGM").

*When playing a CD-DA disc, (SHUF) Play performs the same operation as 1 DISC (SHUF) Play.

Notes on Repeat Play

- All tracks or files on a disc are played repeatedly up to five times.
- You cannot select "REP" and "ALL DISCS SHUF" at the same time.
- "REP1" indicates that a single track or file is repeated until you stop it.
- Notes on playing MP3 discs
- Do not save other types of files or unnecessary folders on a disc that has MP3 files.
- Folders that have no MP3 files are skipped.
- MP3 files are played back in the order that they are recorded onto the disc.
- The system can only play MP3 files that have a file extension of ".MP3."
- If there are files on the disc that have the ".MP3" file extension, but that are not MP3 files, the unit may produce noise or may malfunction.

• The maximum number of:

- folders is 150 (including the root folder).
 - MP3 files is 255.
 - MP3 files and folders that can be contained on a single disc is 300.
 - folder levels (the tree structure of files) is 8.
- Compatibility with all MP3 encoding/writing software, recording device, and recording media cannot be guaranteed. Incompatible MP3 discs may produce noise or interrupted audio or may not play at all.

Notes on playing multisession discs

- If the disc begins with a CD-DA (or MP3) session, it is recognized as a CD-DA (or MP3) disc, and playback continues until another session is encountered.
- A disc with a mixed CD format is recognized as a CD-DA (audio) disc.

Notes on the Mexican model

- You cannot select the graphic channels of CD-Gs or display CD-G images with fading effects.
- Some functions of the unit, when used during CD-G disc playback, may cause image distortion in the video output.

Listening to the radio

1 Select "FM" or "AM."

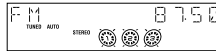
Press TUNER/BAND repeatedly.

2 Select the tuning mode.

Press TUNING MODE 3 repeatedly until "AUTO" appears.

3 Tune in the desired station.

Press +/- on the remote (or TUNING +/- on the unit) 8. Scanning stops automatically when a station is tuned in, and then "TUNED" and "STEREO" (for stereo programs) appear.



To stop automatic scanning

Press (stop) 8.

To tune in a station with a weak signal

If "TUNED" does not appear and the scanning does not stop, press TUNING MODE 16 repeatedly until "AUTO" and "PRESET" disappear, and then press +/- on the remote (or TUNING +/- on the unit) 8 repeatedly to tune in the desired station.

To reduce static noise on a weak FM stereo station

Press FM MODE 15 on the remote repeatedly until "MONO" appears to turn off stereo reception.

Playing a tape

1 Select a tape deck.

Press TAPE (or TAPE A/B on the unit) 3 repeatedly.

2 Insert a tape.

Press PUSH 7 on the unit, and insert the TYPE I (normal) tape into the cassette holder with the side you want to play facing forward. Make sure there is no slack in the tape to avoid damaging the tape or the tape deck. Press PUSH 7 on the unit again to close the cassette holder.

3 Start playback.

Press (play) on the remote (or (play/pause) on the unit) 8. Do not eject the tape during playback or recording, as this may cause irreparable damage to the tape and the cassette holder.

To	Press
Pause playback	(pause) on the remote (or (play/pause) on the unit) 8. To resume play, press the button again.
Stop playback	(stop) 8.
Rewind or fast forward	(rewind/fast forward) 8.
Select Relay Play*	PLAY MODE 16 repeatedly until "RELAY" appears.

* After the playback of the front side of deck A, deck B plays the front side, and then stops.

Changing the display

To	Press
Change the illumination pattern around the VOLUME control	ILLUMINATION 4 on the unit repeatedly.
Change information on the display*	DISPLAY 5 repeatedly when the system is turned on.
Change Display mode (See below.)	DISPLAY 5 repeatedly when the system is turned off.

* For example, you can view CD/CD-G/MP3 disc information, such as the track or file number or folder name during normal play, or the total playing time while the player is stopped.

The system offers the following display modes.

Display mode	When the system is off ¹⁾
Demonstration	The clock display is replaced by lighting and flashing of the display window.
Clock	The clock is displayed.
Power Saving Mode ²⁾	The display is turned off to conserve power. The timer and clock continue to operate.

¹⁾ The STANDBY indicator 2 on the unit lights up when the system is off.

- ²⁾ When the system is in Power Saving Mode, the following functions are unavailable:
- setting the clock.
 - changing the AM tuning interval (except for Saudi Arabian model).
 - turning on the system by pressing the function buttons (for example, CD 3).
 - changing the CD power manage function.
 - resetting the system to factory settings.

Notes on the display information

- The following are not displayed:
 - total playing time for a CD-DA disc depending on the play mode.
 - total playing time for an MP3 disc.
 - Remaining playing time for an MP3 file.
- The following are not displayed correctly:
 - elapsed playing time of an MP3 file encoded using a VBR (variable bit rate).
 - folder and file names that do not follow either the ISO9660 Level 1, Level 2 or Joliet in the expansion format.
- The following are displayed:
 - ID3 tag information for MP3 files when ID3 version 1 and version 2 tags are used.
 - up to 30 characters of ID3 tag information using uppercase letters (A to Z), numbers (0 to 9), and symbols (" \$ % ' () * , - . / < = > @ [\] _ ' { } ! ? , ;").

Using optional audio components

To connect an optional headphones

Connect headphones to the PHONES jack 9 on the unit.

To connect an optional component

Connect additional audio component to the AUDIO IN jack 10 on the unit using an audio analog cord (not supplied). Turn down the volume on the system, and then select the AUDIO IN function.

Other Operations

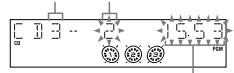
Creating your own CD program (Program Play)

Use buttons on the remote to create your own program.

- 1 Press CD [3] to select the CD function.
- 2 Press PLAY MODE [16] repeatedly until "PGM" appears while the player is stopped.
- 3 Press DISC SKIP [18] repeatedly to select a disc.
- 4 Press [14] repeatedly until the desired track number appears.

When programming MP3 files, press [14] +/- (select folder) [8] repeatedly to select the desired folder, and then select the desired file.

Disc tray number Selected track or file number



Total playing time of program (including selected track or file)

Press ENTER [14] to add the track or file to the program.

"--:--:--" appears when the total program time exceeds 100 minutes for a CD, or when you select an MP3 file.

- 6 Repeat steps 3 through 5 to program additional tracks or files, up to a total of 25 tracks or files.
 - 7 To play your program of tracks or files, press [play] [8].
- The program remains available until you open the disc tray. To play the same program again, press [play] [8].

To cancel Program Play

Press PLAY MODE [16] repeatedly until "PGM" disappears while the player is stopped.

To delete the last track or file of the program
Press CLEAR [22] while the player is stopped.

To view program information, such as total playing time and the number of tracks
Press DISPLAY [5] repeatedly while the player is stopped.

Presetting radio stations

You can preset your favorite radio stations and tune them in instantly by selecting the corresponding preset number.

Use buttons on the remote to preset stations.

- 1 Tune in the desired station (see "Listening to the radio").
- 2 Press TUNER MEMORY [29].

Preset number



Press +/- [8] repeatedly to select your desired preset number.

If another station is already assigned to the selected preset number, the station is replaced by the new stations.

- 4 Press ENTER [14].
 - 5 Repeat steps 1 through 4 to store other stations.
- You can preset up to 20 FM and 10 AM stations. The preset stations are retained for about half a day even if you disconnect the power cord or if a power failure occurs.
- 6 To call up a preset radio station, press TUNING MODE [16] repeatedly until "PRESET" appears, and then press +/- [8] repeatedly to select the desired preset number.

Recording onto a tape

You can record on a TYPE I (normal) tape in three ways:

CD Synchro Recording:

You can record an entire CD onto a tape. The recording level is adjusted automatically.

Manual Recording:

You can record just the portions you like from a sound source, including connected audio components.

Sound Mixing (Latin American model only):

You can "mix" sounds by playing one of the components and singing or speaking into a microphone (not supplied). The mixed sound can be recorded onto a tape.

Use buttons on the unit to control tape recording.

- 1 Load a recordable tape into deck B with the side you want to record facing forward, and then press TAPE A/B [3] repeatedly to select TAPE B.

- 2 Prepare the recording source.

For CD Synchro Recording:

Press CD [3] to select the CD function. Load the disc you want to record, and press DISC SKIP [18] repeatedly to select the disc.

When recording a folder from an MP3 disc, press PLAY MODE [16] repeatedly to select [14] and then press [14] +/- (select folder) [8] repeatedly to select the desired folder.

To record only your favorite CD tracks or MP3 files in your desired order, perform steps 2 to 6 of "Creating your own CD program."

For Manual Recording and Sound Mixing:

Select the desired source to record or mix.

To record only sound from a microphone, press CD [3], and do not start playing any other source in step 4.

- 3 Set deck B to stand by for recording.

For CD Synchro Recording:

Press CD SYNC [6].

For Manual Recording and Sound Mixing:

Press REC PAUSE/START [6].

- 4 Start recording.

While recording, you cannot listen to other sources.

For CD Synchro Recording:

Press REC PAUSE/START [6]. When the recording is completed, the CD player and the tape deck stop automatically.

For Manual Recording:

Press REC PAUSE/START [6], and then start playing the desired recording source.

If there is noise while recording from the tuner, reposition the appropriate antenna to reduce the noise.

For Sound Mixing:

Press REC PAUSE/START [6], and then start playing the desired source and start singing or speaking into the microphone.

If acoustic feedback (howling) occurs, reduce the volume, move the microphone away from the speakers, or change the direction of the microphone.

To stop recording

Press [stop] [8].

Notes

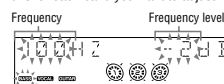
- Recording stops if you change to a different function.
- When loud sound signals are input, the system automatically adjusts the recording level to prevent distortion of the recorded sound signal (Auto Level Control function).
- You cannot eject the disc during CD Synchro Recording.

Creating your own sound effect

You can raise or lower the levels of specific frequency ranges, and then store the setting as "USER" in the memory.

Use buttons on the unit to create your own sound effect.

- 1 Press BASS, VOCAL or GUITAR [24] to select a frequency band.
- 2 Press SELECT +/- [20] repeatedly to select a frequency, and then press SELECT +/- repeatedly to adjust the frequency level. Repeat this for each band you want to adjust.



Frequency band

- 3 Hold down PRESET EQ [23] until "COMPLETE" appears

The setting is stored in the memory.

- 4 To call up the personal sound effect, press PRESET EQ [23] repeatedly until "USER" appears.

To cancel the sound effect

Press PRESET EQ [23] repeatedly until "EQ OFF" appears.

Enjoying karaoke

(Latin American model only)

You can sing along by connecting an optional microphone.

Use buttons on the unit for karaoke.

- 1 Turn MIC LEVEL [11] to MIN to turn down the microphone volume level.
 - 2 Connect an optional microphone to the MIC jack [11].
- The Mexican model has 2 microphone jacks.
- 3 For the Mexican model only:
Press KARAOKE [5] repeatedly to select "KARAOKE PON" for stereo-recorded CD, or "MPX L" or "MPX R" for multiplex CD.

- 4 Start playing the music.

- 5 Turn MIC LEVEL [11] to adjust the microphone volume.

If acoustic feedback (howling) occurs, reduce the volume, move the microphone away from the speakers, or change the direction of the microphone. After you have finished, disconnect the microphone from the MIC jack [11].

For the Mexican model only:

To cancel karaoke mode, in addition to the above procedure, press KARAOKE [5] repeatedly until "K" disappears.

To adjust the microphone reverb, turn ECHO LEVEL [11] to adjust the reverb effect. To cancel, turn ECHO LEVEL [11] to MIN.

To use CD-Gs, turn on your TV, and select the appropriate video input.

Note on the Mexican model

You cannot set the SURROUND effect when "KARAOKE PON" has been selected.

Using the Timers

The system offers three timer functions. You cannot activate both the Play Timer and the Rec Timer at the same time. If you use either with the Sleep Timer, the Sleep Timer has priority.

Sleep Timer:

You can fall asleep to music. This function works even if the clock is not set.

Press SLEEP [13] repeatedly. If you select "AUTO," the system automatically turns off after the current disc or tape stops or in 100 minutes.

Do not select "AUTO" during Synchro Recording of a tape.

Play Timer:

You can wake up to CD, tape or tuner at a preset time.

Rec Timer:

You can record a preset radio station at a specified time.

Use buttons on the remote to control the Play Timer and the Rec Timer. Make sure you have set the clock.

- 1 Prepare the sound source.

For Play Timer:

Prepare the sound source, and then press VOLUME +/- [12] to adjust the volume.

To start from a specific CD track or MP3 file, create your own program.

For Rec Timer:

Tune in the preset radio station.

- 2 Press CLOCK/TIMER SET [27].

- 3 Press [14] repeatedly to select "PLAY SET" or "REC SET," and then press ENTER [14].

"ON" appears, and the hour indication flashes.

- 4 Set the time to start playing or recording.

Press [14] repeatedly to set the hour, and then press ENTER [14].

The minute indication flashes. Use the procedure above to set the minutes.

- 5 Use the same procedure as in step 4 to set the time to stop playing or recording.

- 6 Select the sound source or prepare the tape.

For Play Timer:

Press [14] repeatedly until the desired sound source appears, and then press ENTER [14]. The display shows the timer settings.

For Rec Timer:

Load a recordable tape into deck B. The display shows the timer settings.

- 7 Press I/O (power) [1] to turn off the system.

The system turns on 15 seconds before the preset time. If the system is on at the preset time, the Play Timer and the Rec Timer will not play or record.

To activate or check the timer again

Press CLOCK/TIMER SELECT [27], press [14] repeatedly until "PLAY SELECT" or "REC SELECT" appears, and then press ENTER [14].

To cancel the timer

Repeat the same procedure as above until "TIMER OFF" appears, and then press ENTER [14].

To change the setting

Start over from step 1.

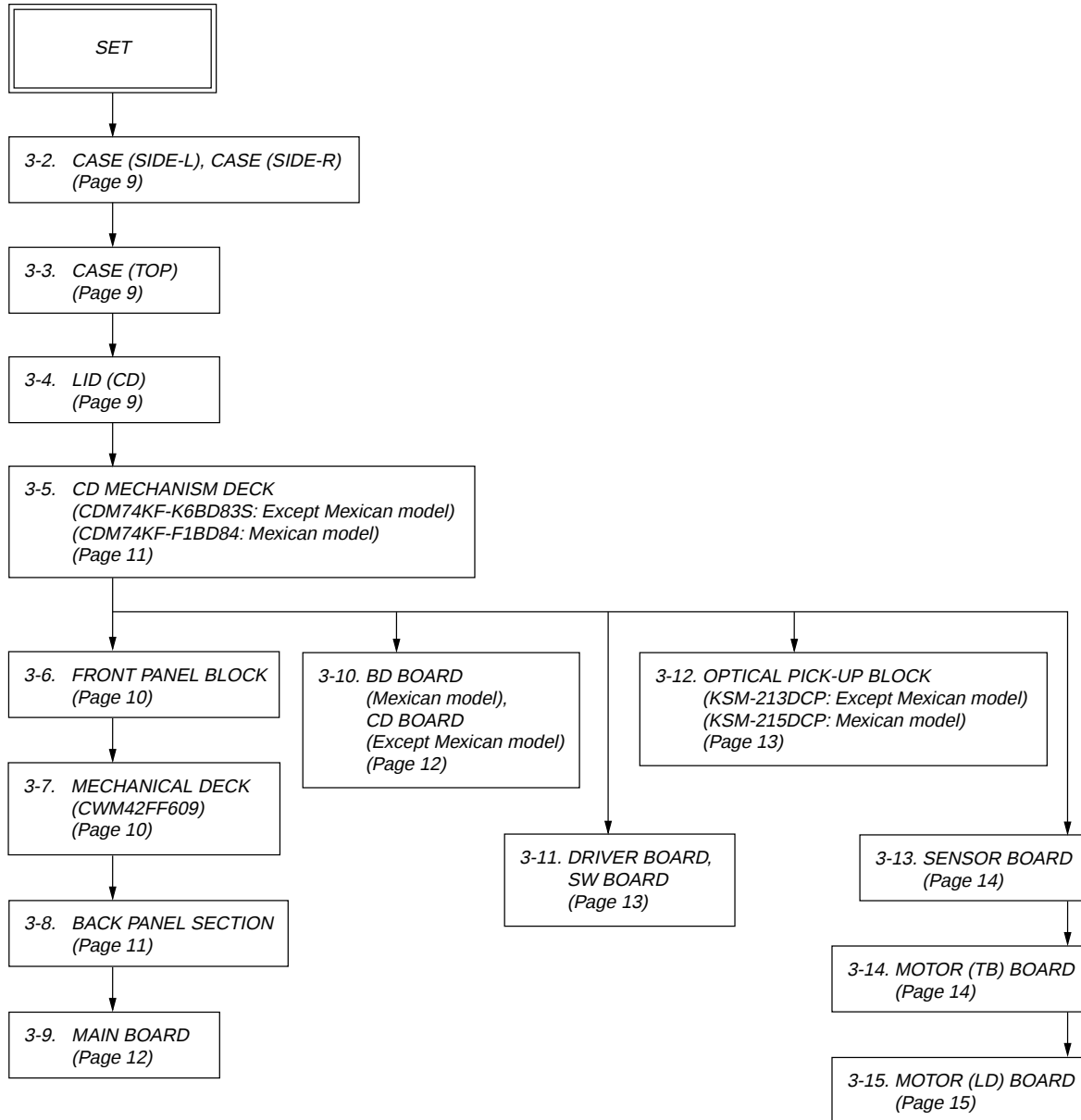
Tips

- The Play Timer setting remains as long as the setting is not canceled manually.
- The volume is reduced to minimum during the Rec Timer.
- The Rec Timer is canceled automatically after the Rec Timer has been activated.

SECTION 3 DISASSEMBLY

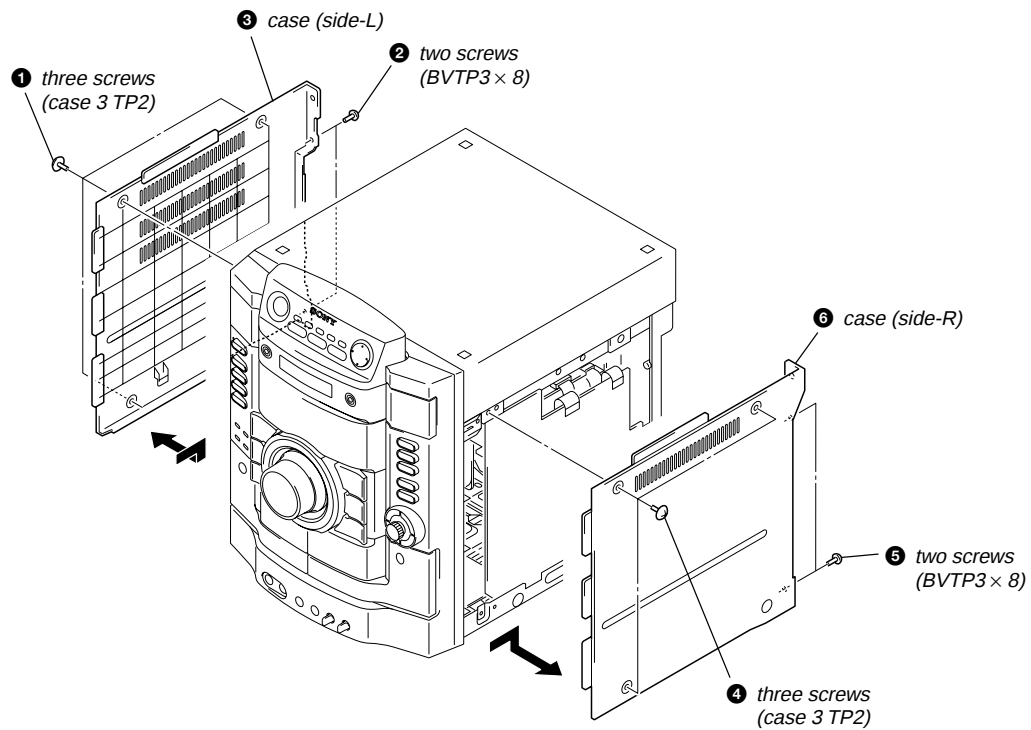
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

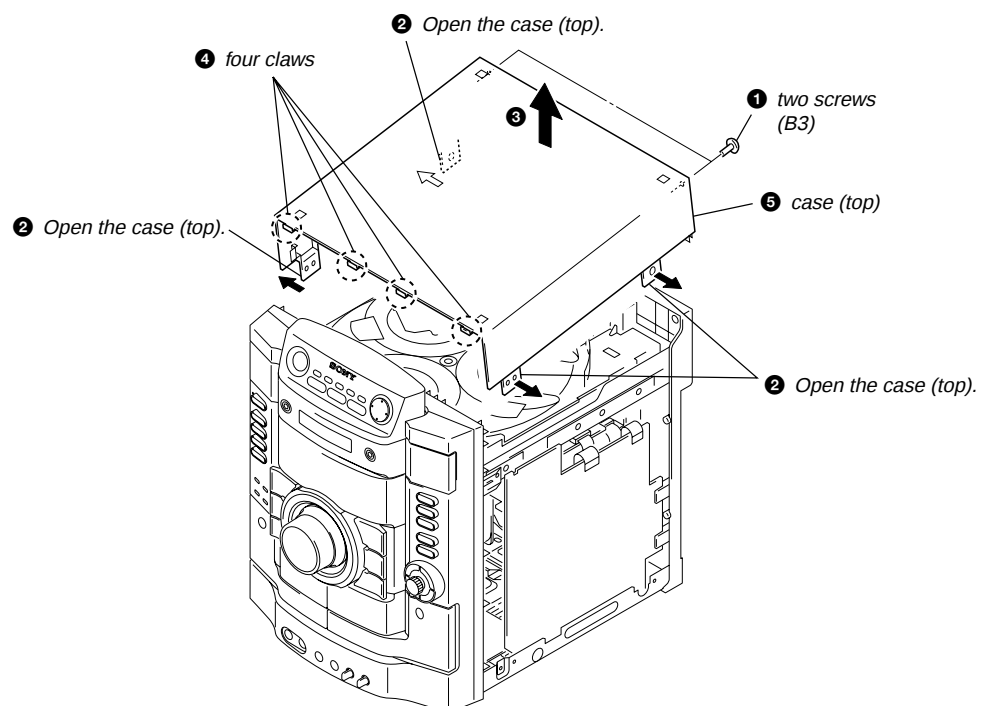


Note: Follow the disassembly procedure in the numerical order given.

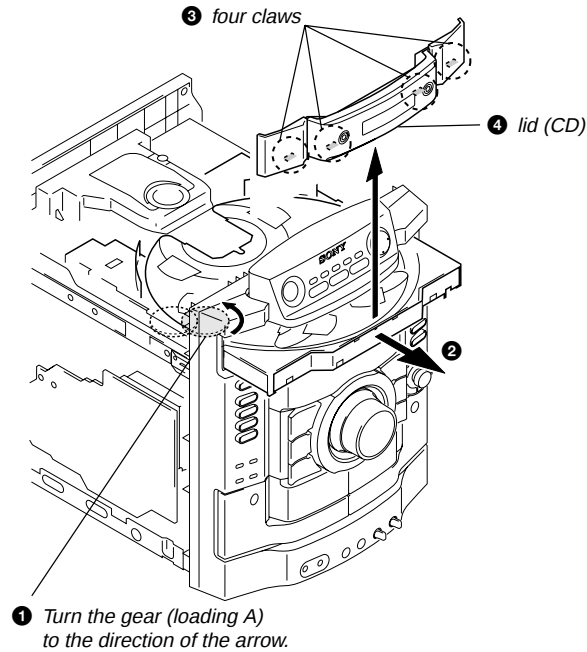
3-2. CASE (SIDE-L), CASE (SIDE-R)



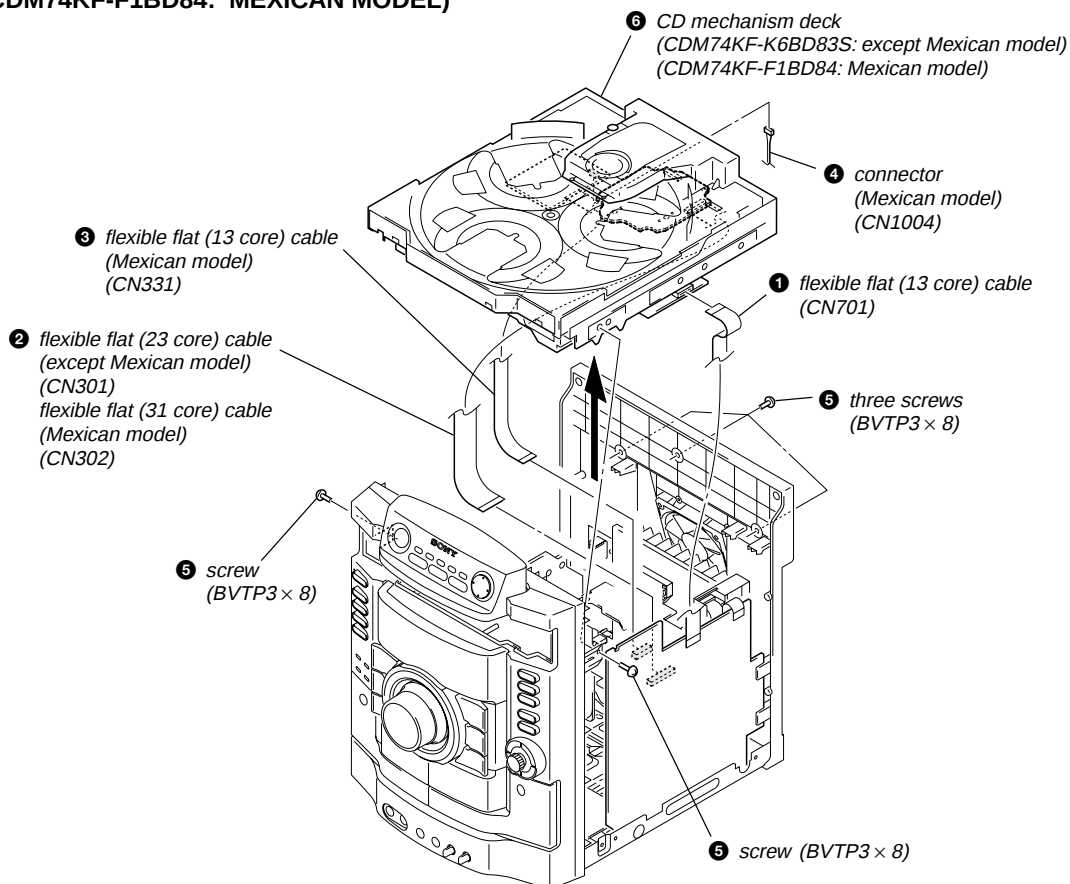
3-3. CASE (TOP)



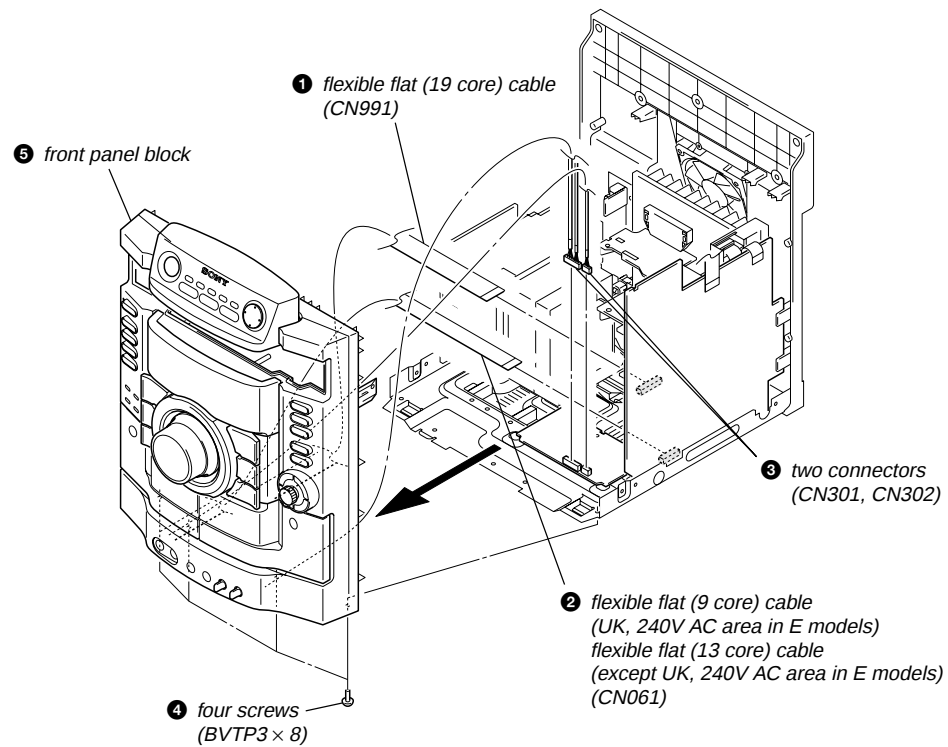
3-4. LID (CD)



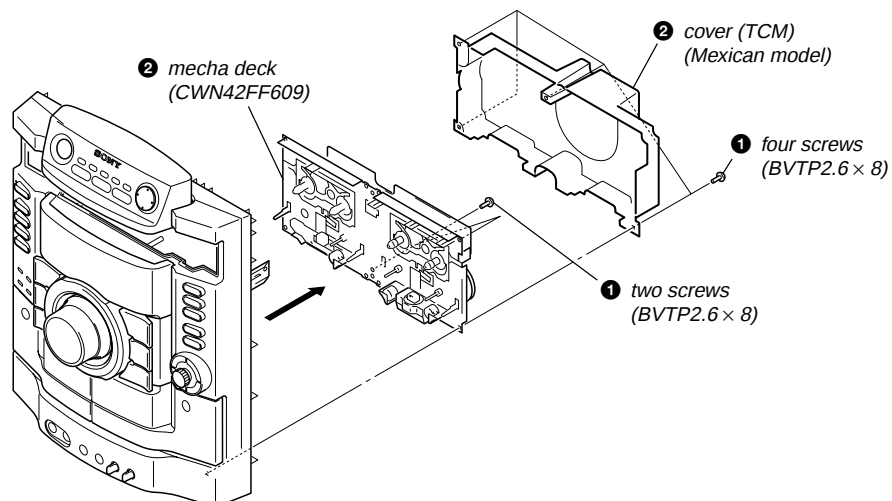
3-5. CD MECHANISM DECK (CDM74KF-K6BD83S: EXCEPT MEXICAN MODEL) (CDM74KF-F1BD84: MEXICAN MODEL)



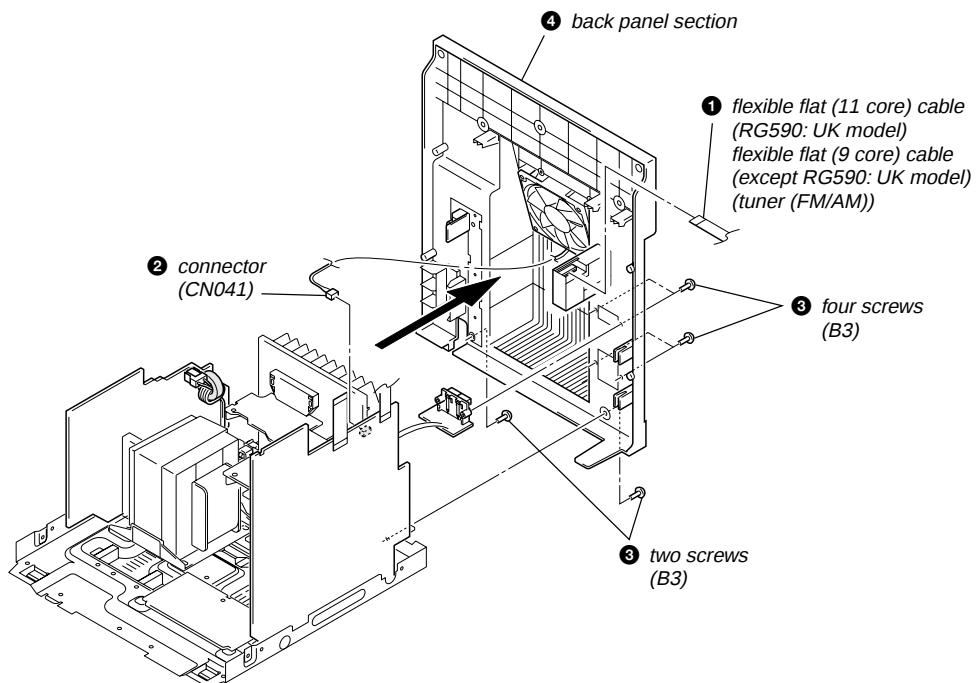
3-6. FRONT PANEL BLOCK



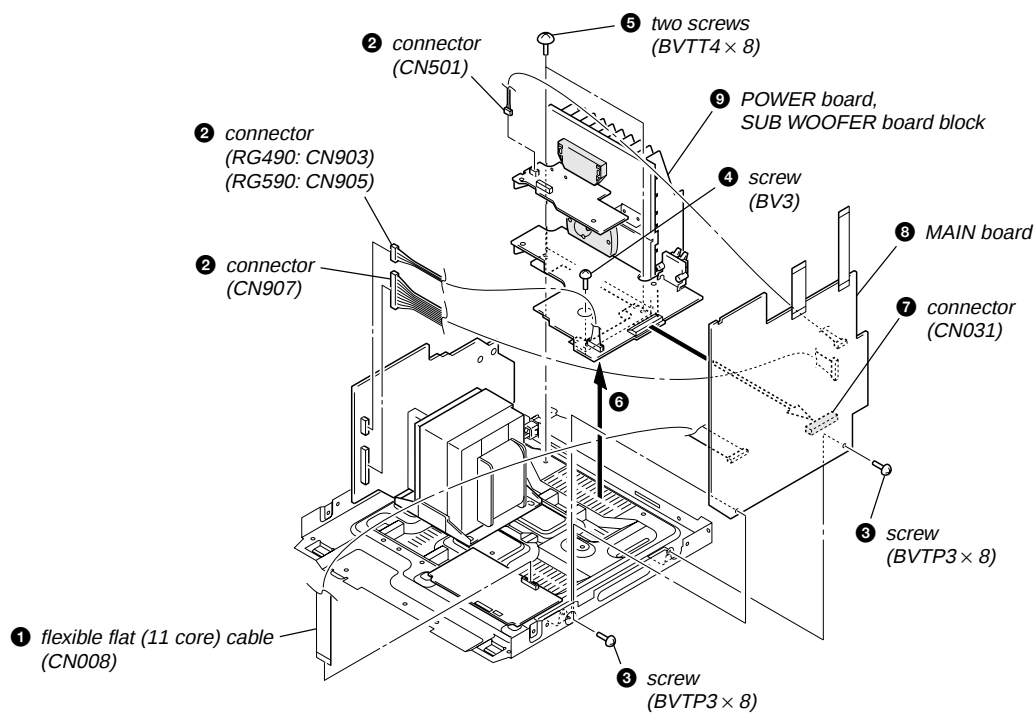
3-7. MECHA DECK (CWN42FF609)



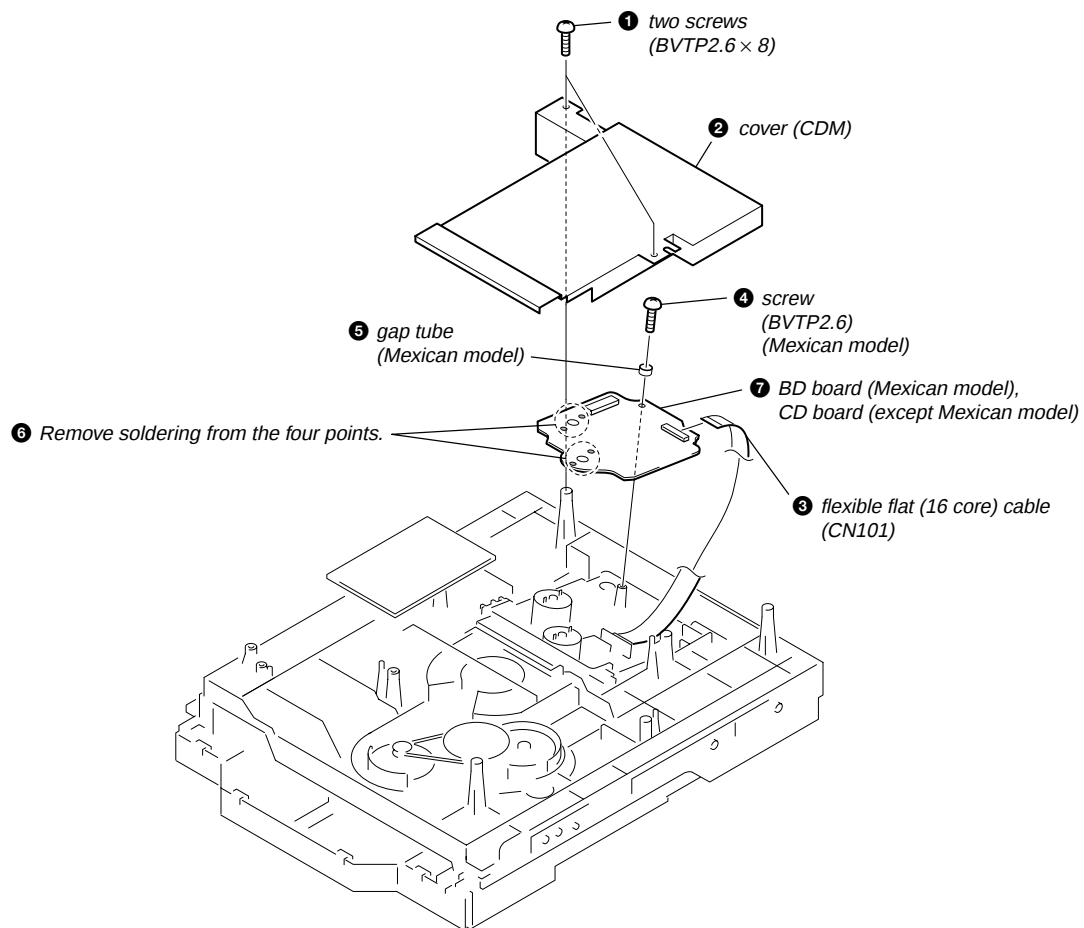
3-8. BACK PANEL SECTION



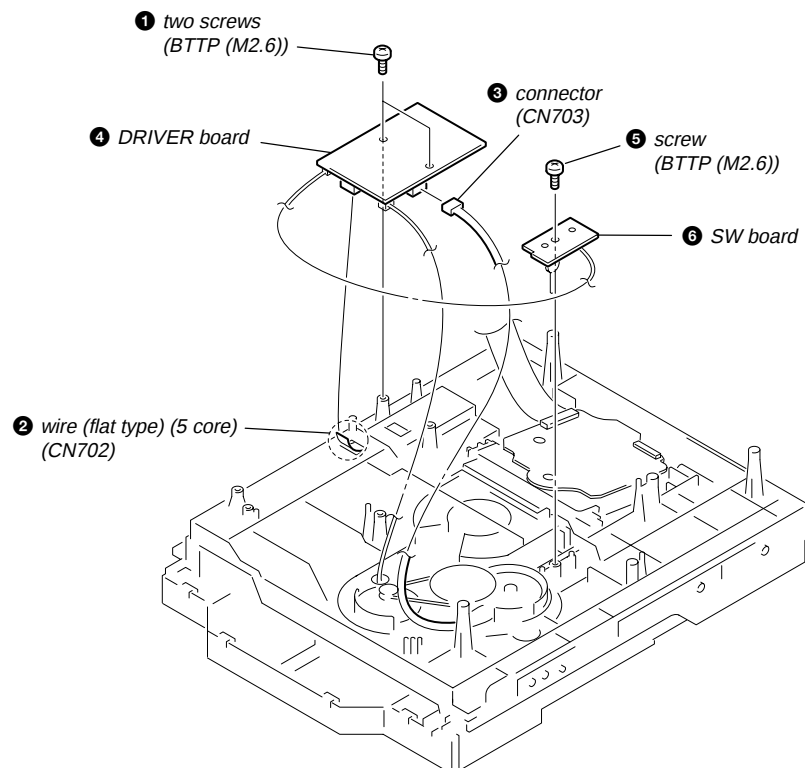
3-9. MAIN BOARD



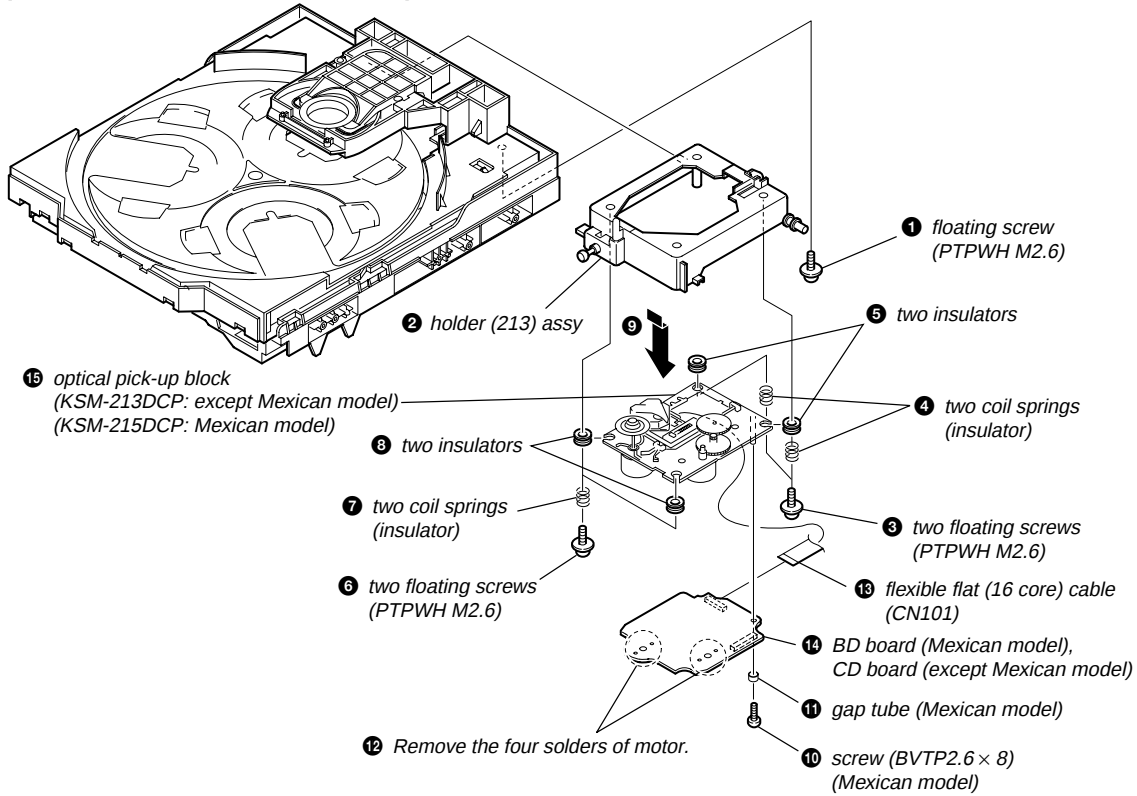
3-10. BD BOARD (MEXICAN MODEL), CD BOARD (EXCEPT MEXICAN MODEL)



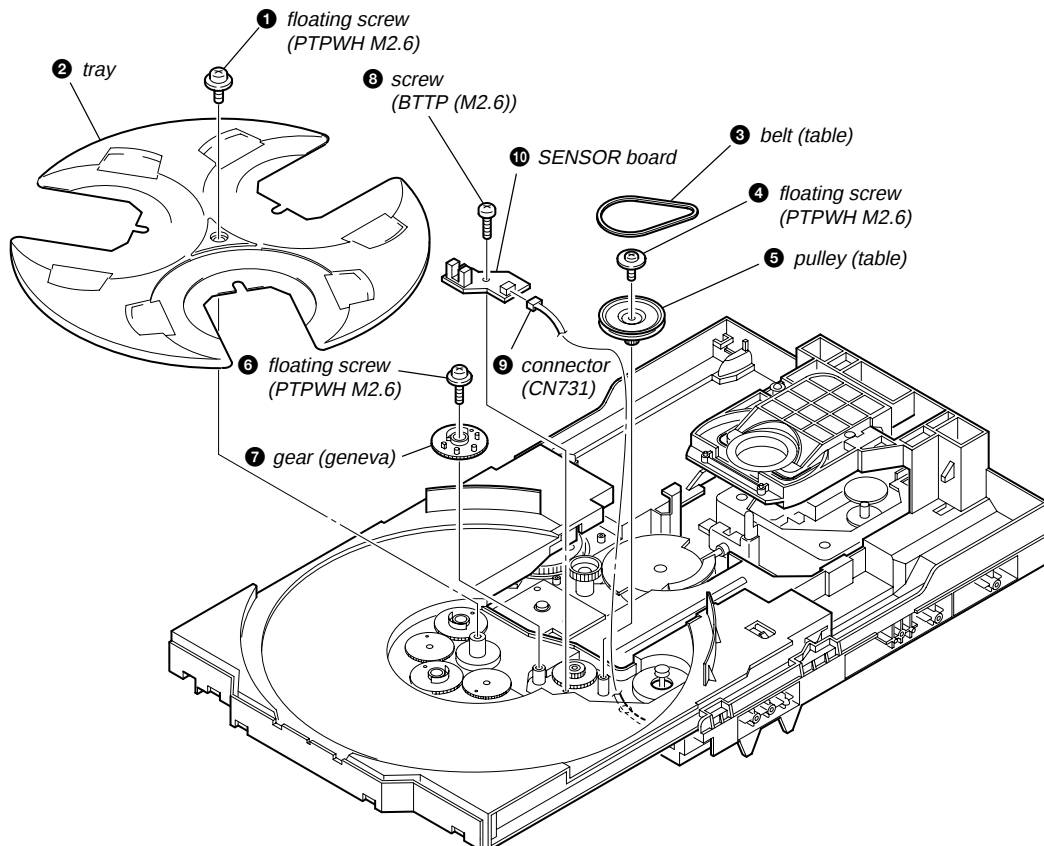
3-11. DRIVE BOARD, SW BOARD



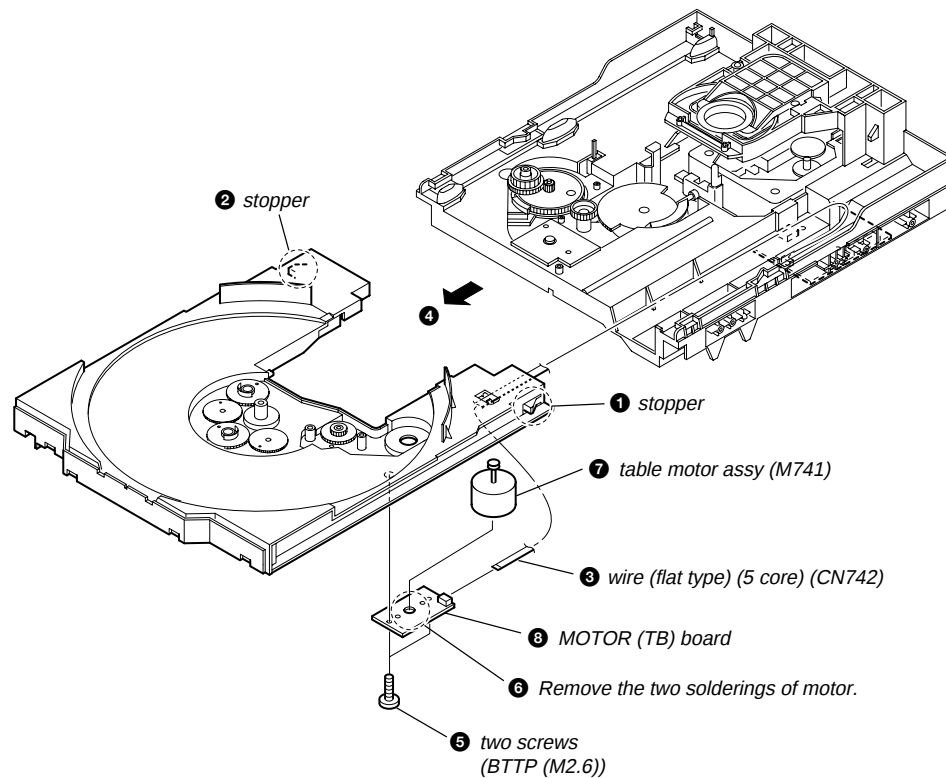
3-12. OPTICAL PICK-UP BLOCK
(KSM-213DCP: EXCEPT MEXICAN MODEL)
(KSM-215DCP: MEXICAN MODEL)



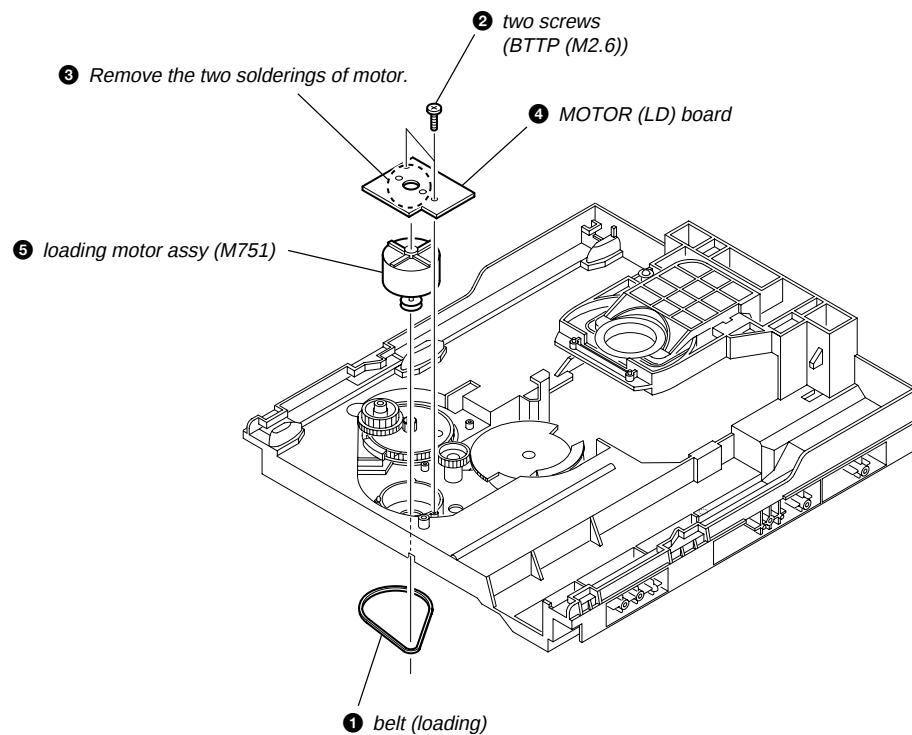
3-13. SENSOR BOARD



3-14. MOTOR (TB) BOARD



3-15. MOTOR (LD) BOARD



SECTION 4

TEST MODE

COLD RESET

The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons of **[■]**, **[▶II]** and **[DISC 1]** simultaneously.
2. The message "COLD RESET" is displayed on the fluorescent indicator tube momentarily, then becomes standby states.

TUNING STEP CHANGE-OVER

(Except HCD-RG590: UK model)

A step of AM tuning interval can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press the **[TUNER/BAND]** button to select "AM".
3. Press the **[I/⏻]** button to turn the power off.
4. Press two buttons of **[TUNING -]** and **[I/⏻]** simultaneously.
5. The message "AM 9K STEP" or "AM 10K STEP" is displayed on the fluorescent indicator tube, and thus the tuning interval is changed over.

CD SHIP (LOCK) MODE

This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press the **[CD]** button to select "CD".
3. Press two buttons of **[▶II]** and **[POWER]** simultaneously.
4. The message "LOCK" is displayed on the fluorescent indicator tube, and the CD ship mode is set.

CD SHIP (LOCK) MODE & COLD RESET

This mode is used to perform CD ship (lock) mode and cold reset simultaneously.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press the **[CD]** button to select "CD".
3. Press three buttons of **[■]**, **[CD]** and **[▶II]** simultaneously.
4. The message "COLD RESET" is displayed on the fluorescent indicator tube momentarily, then becomes standby states.

ANTITHEFT LOCK MODE

This mode is used to unable to take sample disc out of disc table in the shop.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press the **[CD]** button to select "CD".
3. Press two buttons of **[■]** and **[▶II]** for 5 seconds.
4. The message "LOCKED" is displayed on the fluorescent indicator tube and the disc table is locked. (Even if pressing the **[▶II]** button, the message "LOCKED" is displayed on the fluorescent indicator tube and the disc table is locked)
5. To release this mode, press two buttons of **[■]** and **[▶II]** for 5 seconds.
6. The message "UNLOCKED" is displayed on the fluorescent indicator tube and the disc table is unlocked.

AMP TEST MODE

This mode is used to display the parameter of amplifier IC and display the VACS status.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press three buttons of **[■]**, **[▶II]** and **[▶II]** simultaneously.
3. When the AMP test mode is activated, the message "AMP TEST IN" is displayed on the fluorescent indicator tube momentarily, then amplifier adjustment mode is displayed on the fluorescent indicator tube.
4. Press the **[REC PAUSE/START]** button to changed over between VACS status display mode and the amplifier IC parameter display mode.
5. In this mode, press the **[ENTER]** button to changed over DBFB on/off, and "DBFB ON" or "DBFB OFF" is displayed on the fluorescent indicator tube.
6. In this mode, press the **[SURROUND]** button to changed over surround on/off, and "SURROUND ON" or "SURROUND OFF" is displayed on the fluorescent indicator tube.

– HCD-RG490/RG590: UK models –

7. In this mode, press the **[EQ BAND]** button to enter the equalizer adjustment mode.

In the equalizer adjustment mode, press the **[EQ BAND]** button to change over the adjustment band as LOW/MID/HIGH. And turn the multi jog knob to adjust the equalizer level of each bands.

– Except HCD-RG490/RG590: UK models –

7. In this mode, press the **[BASS]**, **[VOCAL]** or **[GUITER]** buttons to enter the parametric equalizer adjustment mode.

In the parametric equalizer adjustment mode, press the **[BASS]**, **[VOCAL]** and **[GUITER]** buttons to change over the adjustment band. And press the **[◀]** and **[▶]** buttons to adjust the equalizer frequency of each bands, or press the **[+]** and **[-]** buttons to adjust the equalizer level of each bands.

8. To release the amplifier IC parameter display mode or equalizer adjustment mode, press the **[I/⏻]** button to the power off.

MC TEST MODE

This mode is used to check operations of microprocessor.

Procedure:

1. Press the **[I/⏻]** button to turn the power on.
2. Press three buttons of **[■]**, **[▶II]** and **[DISC 3]** simultaneously.
3. When the MC test mode is activated, VACS level is displayed on the fluorescent indicator tube momentarily.
4. Turn the multi jog knob clockwise, the message "ALL EQ MAX" is displayed on the fluorescent indicator tube momentarily and turn the multi jog knob counterclockwise, the message "ALL EQ MIN" is displayed on the fluorescent indicator tube momentarily.
5. Press the **[ENTER]** button, the message "ALL EQ FLAT" is displayed on the fluorescent indicator tube momentarily.
6. Turn the **[VOLUME]** knob clockwise, the message "VOLUME MAX" is displayed on the fluorescent indicator tube momentarily and turn the **[VOLUME]** knob counterclockwise, the message "VOLUME MIN" is displayed on the fluorescent indicator tube momentarily.
7. Press the **[REC PAUSE/START]** button to changed over VACS on/off.
8. Press the **[I/⏻]** button to release from this mode, then cold reset is performed.

VERSION DISPLAY MODE

This mode is used to check the model, destination and software version.

Procedure:

1. Press the **[I/O]** button to turn the power on.
2. Press three buttons of **[■]**, **[▶▶]** and **[DISC 2]** simultaneously.
3. Fluorescent indicator tube, and LEDs are all turned on.
4. Press the **[REC PAUSE/START]** button to display the software version and year, month, day of the software creation.
5. Press the **[CD SYNC]** button to display the model and destination.
6. To release this mode, press three buttons of **[■]**, **[▶▶]** and **[DISC 2]** simultaneously.

CD ERROR CODE DISPLAY MODE

This mode can be used for error code display of CD section.

Procedure:

1. Press the **[I/O]** button to turn the power on.
2. Press the **[CD]** button to select "CD".
3. Press three buttons of **[■]**, **[CD]** and **[DISC 1]** simultaneously.
4. When this mode is activated, mechanism deck error code is displayed on the fluorescent indicator tube.
5. Press the **[REC PAUSE/START]** button to changed over between optical pick-up error code display mode and mechanism deck error code mode.
6. Turn the multi jog knob to change over display of error history.
7. To release this mode, press the **[I/O]** button to turn the power off.

1. Mechanism Deck Error Code Mode

When this mode is entered, mechanism deck error code is displayed with the 10-character format on the fluorescent indicator tube.

The first digit from the left indicates:

The first digit from the left indicates which mode the error history is. In the mechanism deck error code mode, "M" is displayed on the fluorescent indicator tube.

The second digit from the left indicates:

(Error history number display)

The second digit from the left indicates which order the error history is. "1" indicates the latest error history, and each time the number increases by one, the error history goes back to one-previous error.

The third and 4th digit from the left indicates:

(Error status display)

The third and 4th digit from the left indicates which error status is indicated.

Display	Status
0 0	No error
0 8	Table operation time-out (Table does not move to the target position within the specified time)
1 6	In the chucking down operation, the operation was retried by the maximum number of times but the operation could not be completed
1 7	In the chucking up and down operation, the reverse recovery processing was attempted but it could not be recovered
1 8	In the chucking up operation, the operation was retried by the maximum number of times but the operation could not be completed
2 0	Loading operation time-out (Table does not move to the target position within the specified time)
2 2	As the chuck was in the ex-open status at the initialization, the closing was attempted but could not be completed

The 5th and 6th digit from the left indicates:

(Present status display)

The 5th and 6th digit from the left indicates which operating status when an error occurred is indicated.

Display	Status
0 1	Open completion status
0 2	From open status, the movement to chucking down position is under way
0 3	From chucking down position, the open operation is under way
0 4	Chucking down completion status
1 0	The chucking down operation is under way
1 1	The chucking up operation is under way
1 2	Close completion status
1 3	From close status, the ex-open operation is under way
1 4	From ex-open status, the close operation is under way
1 8	Ex-open completion status

The 7th and 8th digit from the left indicates:

(Motor status display)

The 7th and 8th digit from the left indicates which motor output status when an error occurred is indicated.

Display	Status
× 0	No table motor output
× 1	Table motor forward output
× 2	Table motor backward output
× 3	Table motor break output
0 ×	No loading motor output
1 ×	Loading motor forward output
2 ×	Loading motor backward output
3 ×	Loading motor break output

The 9th and 10 th digit from the left indicates:

(Tray status display)

The 9th and 10th digit from the left indicates which target processing when an error occurred is indicated.

Display	Status
0 1	Open operation
1 2	Close operation
1 8	Ex-open operation

2. Optical Pick-up Error Code Mode

When this mode is entered, optical pick-up error code is displayed with the 8-character format on the fluorescent indicator tube.

The first digit from the left indicates:

The first digit from the left indicates which mode the error history is. In the optical pick-up error code mode, “D” is displayed on the fluorescent indicator tube.

The second digit from the left indicates:

(Error history No. display)

The second digit from the left indicates which order the error history is. “1” indicates the latest error history, and each time the number increases by one, the error history goes back to one-previous error.

The third and 4th digit from the left indicates:

(Error status display)

The third and 4th digit from the left indicates which error status is indicated.

Display	Status
0 1	Not focused (TOC read without a disc)
0 2	GFS NG (TOC read with a disc chucked)
0 3	Start operation time-over
0 4	Defocused continuously (Defocused during TOC reading)
0 5	Q code not entered for specified time
0 6	Tracking not turned ON
0 7	Blank disc (Blank disc TOC read)

The 5th and 6th digit from the left indicates:

(Error step display)

The 5th and 6th digit from the left indicates which processing when a trouble occurred

Display	Contents
0 1	Power OFF in progress
0 2	Initialize in progress
0 3	Oscillation stopping
0 4	From oscillation stop, oscillation starting
0 5	Stopping
0 6	Stop operation is under way
0 7	Start operation in progress
0 8	TOC read in progress
0 9	Search operation is under way
0 A	Playback operation is under way
0 B	Pause operation is under way
0 C	Playback manual search operation is under way
0 D	Pause manual search operation is under way
0 E	—

The 7th and 8th digit from the left indicates:

The 7th and 8th digit from the left indicates which operation in progress when a trouble occurred. (Step of each processing of the 5th and 6th digits is indicated)

5 REPEAT LIMIT CANCEL MODE

Number of repeat for CD playback is 5 times when the repeat mode is “REPEAT”. This mode is used to enables CD to repeat playback for limitless times.

Procedure:

1. Press the  button to turn the power on.
2. Press the  button to select “CD”.
3. Press three buttons of ,  and  simultaneously.
4. The message “LIMIT OFF” is displayed on the fluorescent indicator tube momentarily, CD repeat 5 limit is cancelled.

CD POWER MANAGE

This mode is used to changed over CD power on/off for decreasing of reception noise in the tuner mode.

Procedure:

1. Press the  button to turn the power on.
2. Press the  button to select “CD”.
3. Press the  button to turn the power off.
4. Press two buttons of  and  simultaneously.
5. The message “CD POWER ON” or “CD POWER OFF” is displayed on the fluorescent indicator tube, and CD power on/off changed over in the tuner mode.

SECTION 5 MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head magnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

TORQUE MEASUREMENT

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	2.6 – 6.9 mN·m (30 – 70 g·cm) (0.41 – 0.97 oz·inch)
FWD Back Tension	CQ-102C	0.15 – 0.59 mN·m (1.5 – 6.0 g·cm) (0.021 – 0.083 oz·inch)
FF/REW	CQ-201B	5.4 – 16.7 mN·m (55 – 170 g·cm) (0.76 – 2.35 oz·inch)

TAPE TENSION MEASUREMENT

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100 g (more than 3.53 oz)

SECTION 6 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.

4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Playback Head (DECK-A)
Record/Playback/Erase Head (DECK-A)

TEST TAPE

Tape	Signal	Used for
P-4-A063	6.3 kHz, -10 dB	Azimuth Adjustment

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

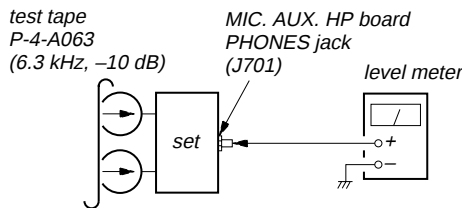
Note 1: Remove the mecha deck before this adjustment.

(Refer to Section 3. DISASSEMBLY (See page 8))

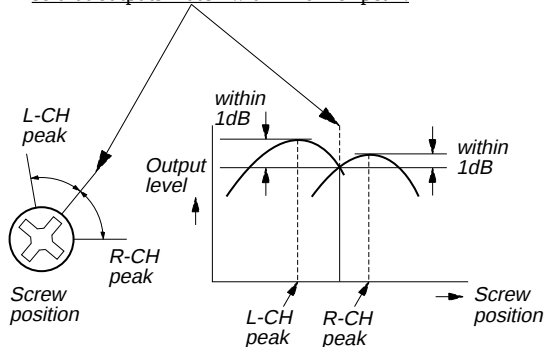
Note 2: Perform this adjustment for both decks.

Procedure:

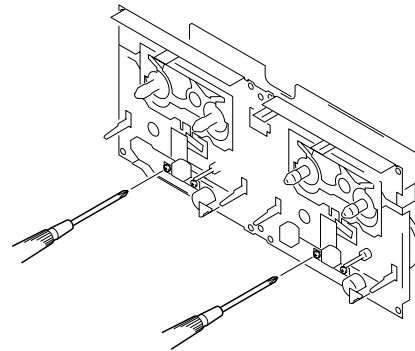
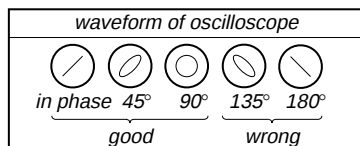
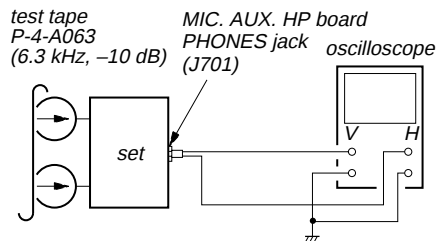
1. Mode: Playback



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



3. Mode: Playback



CD SECTION

Note:

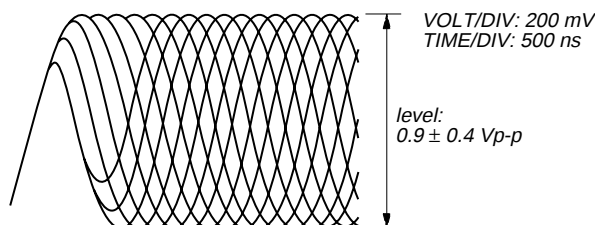
1. CD Block is basically constructed to operate without adjustment.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10 MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Check the focus bias check when optical pick-up block is replaced.
 - Abbreviation
 - MX: Mexican model

FOCUS BIAS CHECK



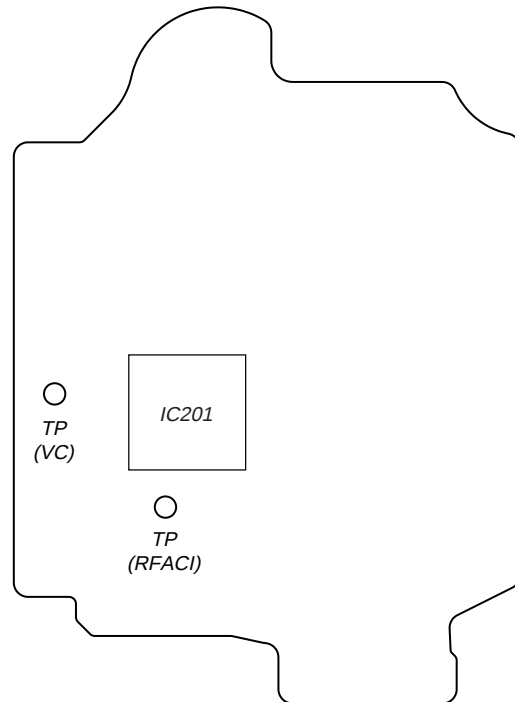
Procedure :

1. Connect oscilloscope to TP (RFACI) and TP (VC) on the CD board (Except RG490: MX/RG590: MX) or BD board (RG490: MX/RG590: MX).
2. Press the button to turn the power on, and press the button to open the CD disc table.
3. Set disc (YEDS-18) on the tray and press the button to playback.
4. Confirm that oscilloscope waveform is as shown in the figure below. (eye pattern)
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

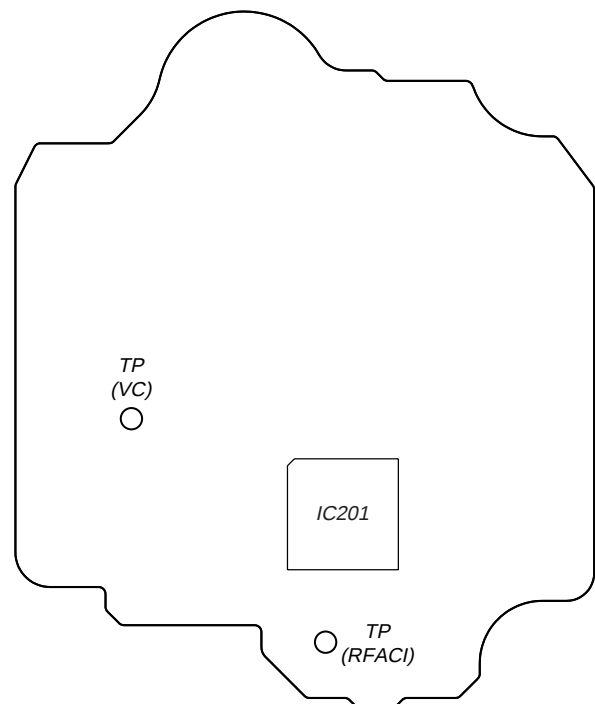


Connecting Location:

– CD Board (Conductor Side)
(Except RG490: MX/RG590: MX) –



– BD Board (Conductor Side) (RG490: MX/RG590: MX) –

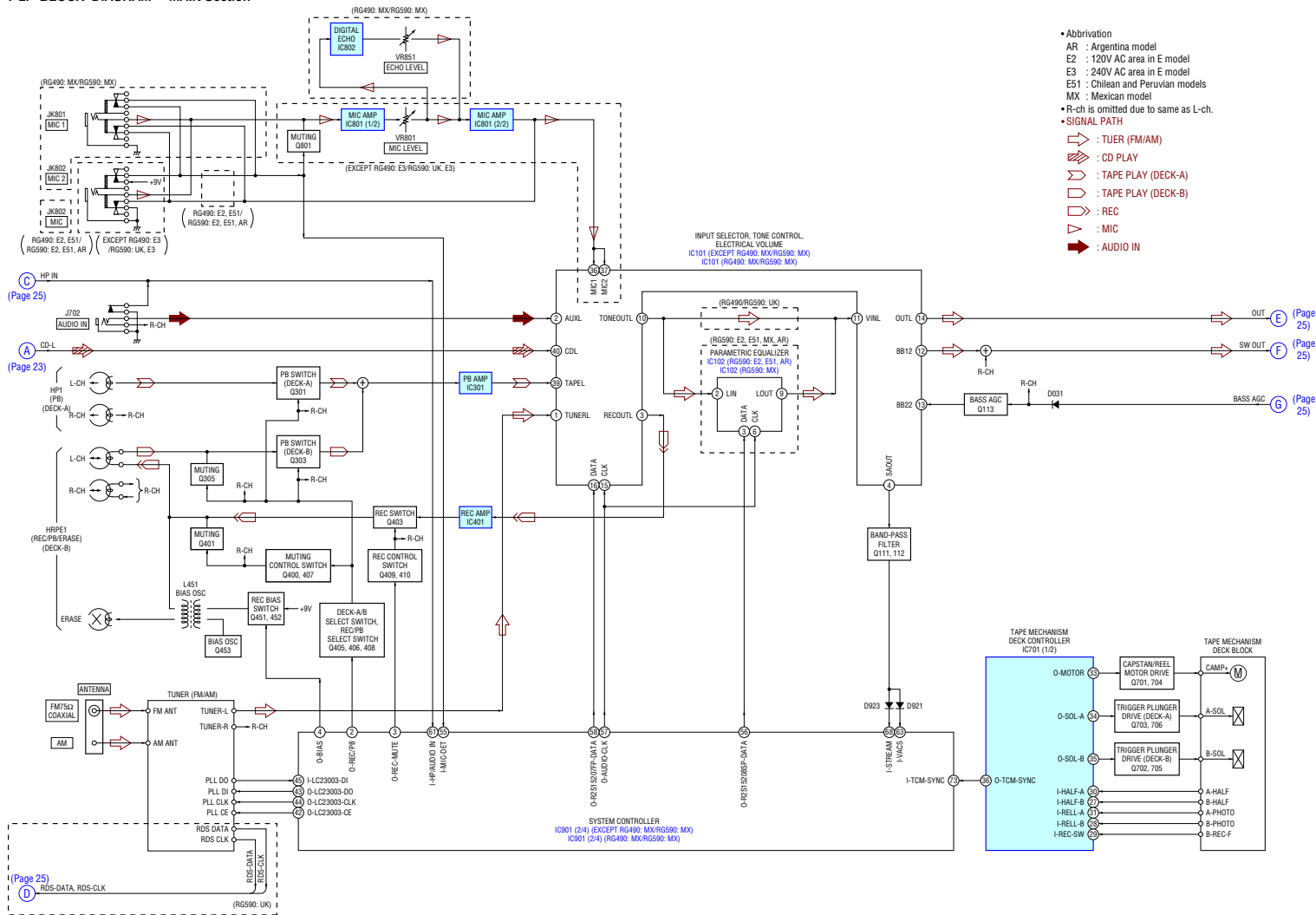


MEMO

[illegible]

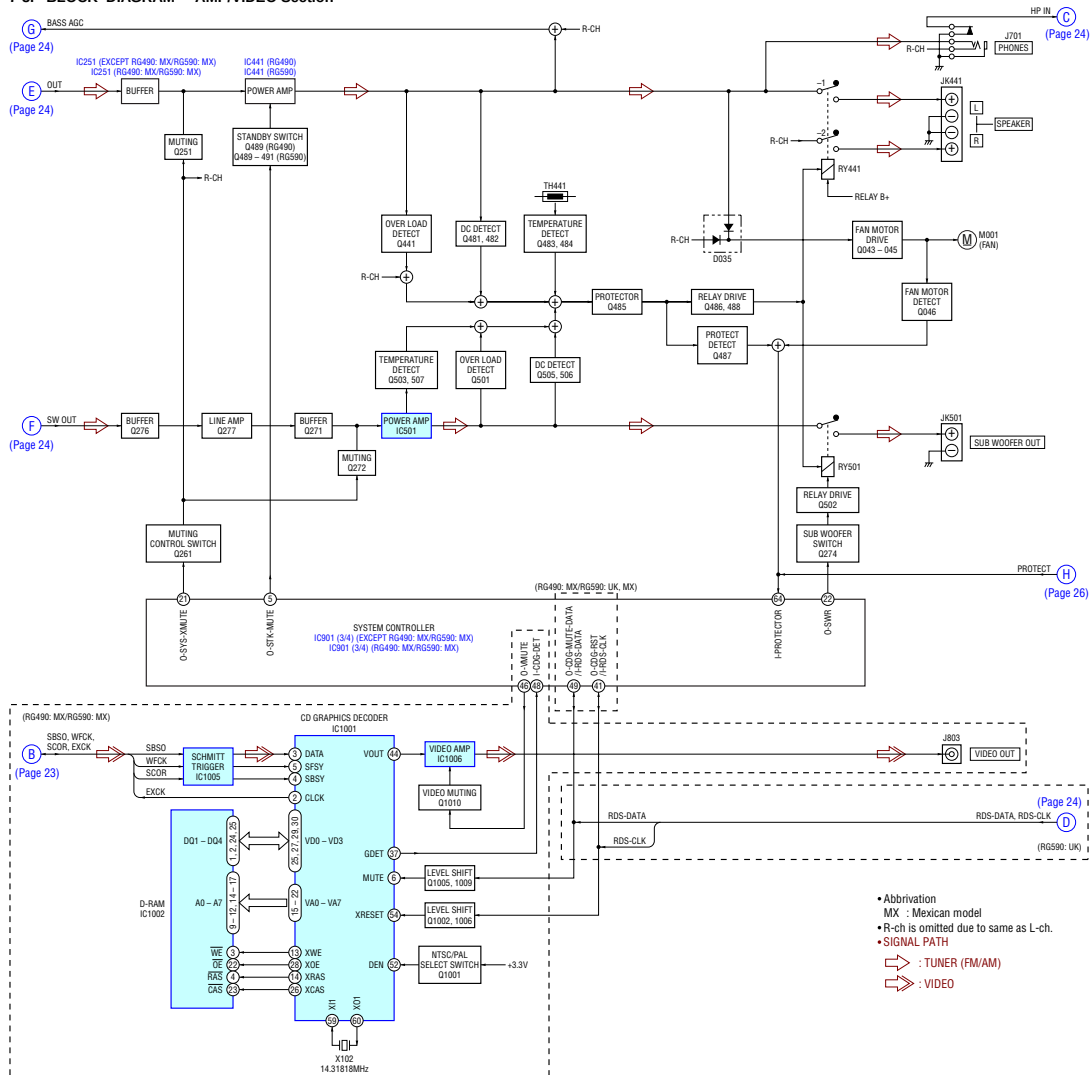
HCD-RG490/RG590

7-2. BLOCK DIAGRAM – MAIN Section –

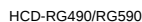


- Abbreviation
 - AR : Argentina model
 - E2 : 120V AC area in E model
 - E3 : 240V AC area in E model
 - E51 : Chilean and Peruvian models
 - MX : Mexican model
- R-ch is omitted due to same as L-ch.
- SIGNAL PATH
 - ➡ : TUNER (FM/AM)
 - ➡ : CD PLAY
 - ➡ : TAPE PLAY (DECK-A)
 - ➡ : TAPE PLAY (DECK-B)
 - ➡ : REC
 - ➡ : MIC
 - ➡ : AUDIO IN

7-3. BLOCK DIAGRAM – AMP/VIDEO Section –



7-4. BLOCK DIAGRAM – PANEL/POWER SUPPLY Section –



• Note For Printed Wiring Boards and Schematic Diagrams

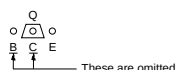
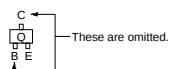
Note on Printed Wiring Board:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- △ : internal component.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Conductor Side)
Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Component Side)

Caution:
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Side B)
Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Side A)

• Indication of transistor



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- △ : internal component.
- $\frac{1}{2}\text{W}$: nonflammable resistor.
- $\frac{1}{4}\text{W}$: fusible resistor.
- $\square$: panel designation.

Note: The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

- — : B+ Line.
- — : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.

- CD/D Boards —
no mark : CD PLAY
— CD-G Board —
no mark : CD-G PLAY
— Other Boards —
no mark : TUNER (FM/AM)
() : CD PLAY
() : TAPE PLAY
() : TAPE REC
* : Impossible to measure

- Voltages are taken with a VOM (input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.

- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.

- Circled numbers refer to waveforms.

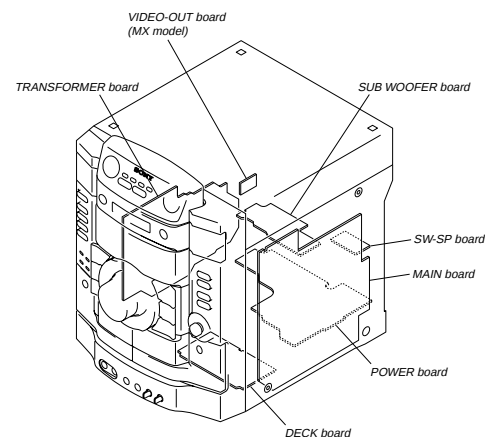
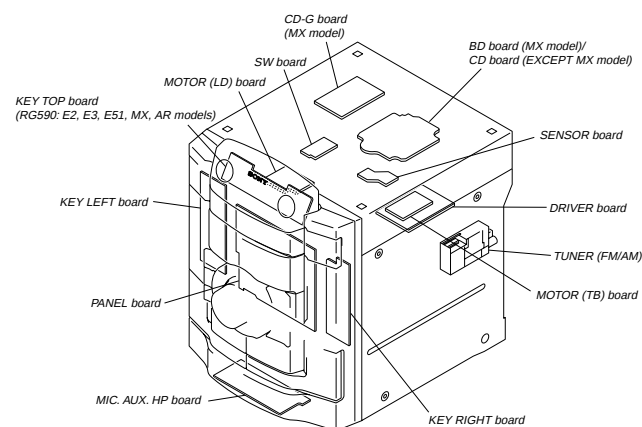
• Signal path.

- : TUNER (FM/AM)
- : CD PLAY
- : TAPE PLAY (DECK-A)
- : TAPE PLAY (DECK-B)
- : REC
- : MIC
- : AUDIO IN
- : VIDEO

• Abbreviation

- AR : Argentina model
- E2 : 120 V AC area in E model
- E3 : 240 V AC area in E model
- E51 : Chilean and Peruvian models
- MX : Mexican model

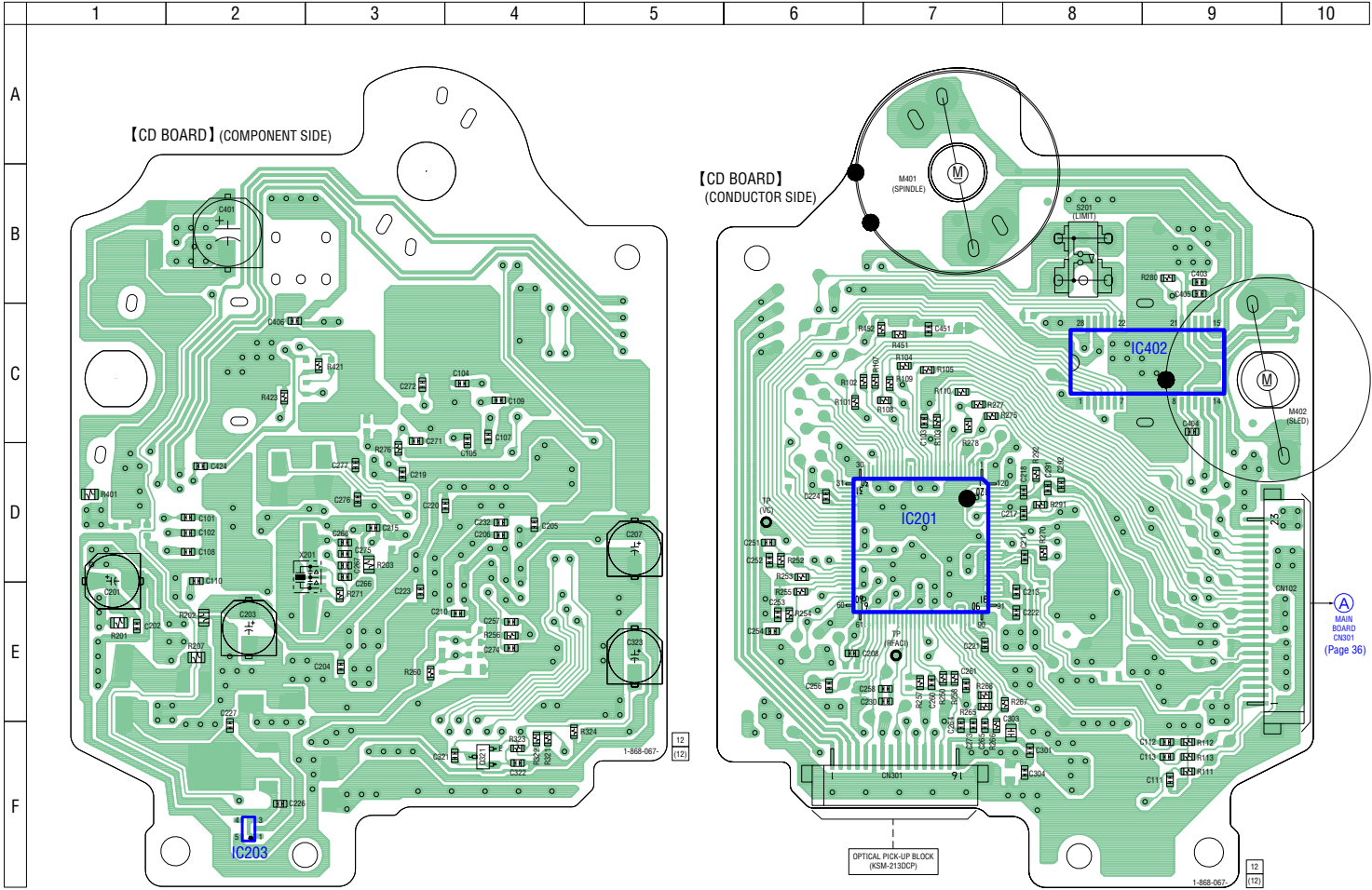
• Circuit Boards Location



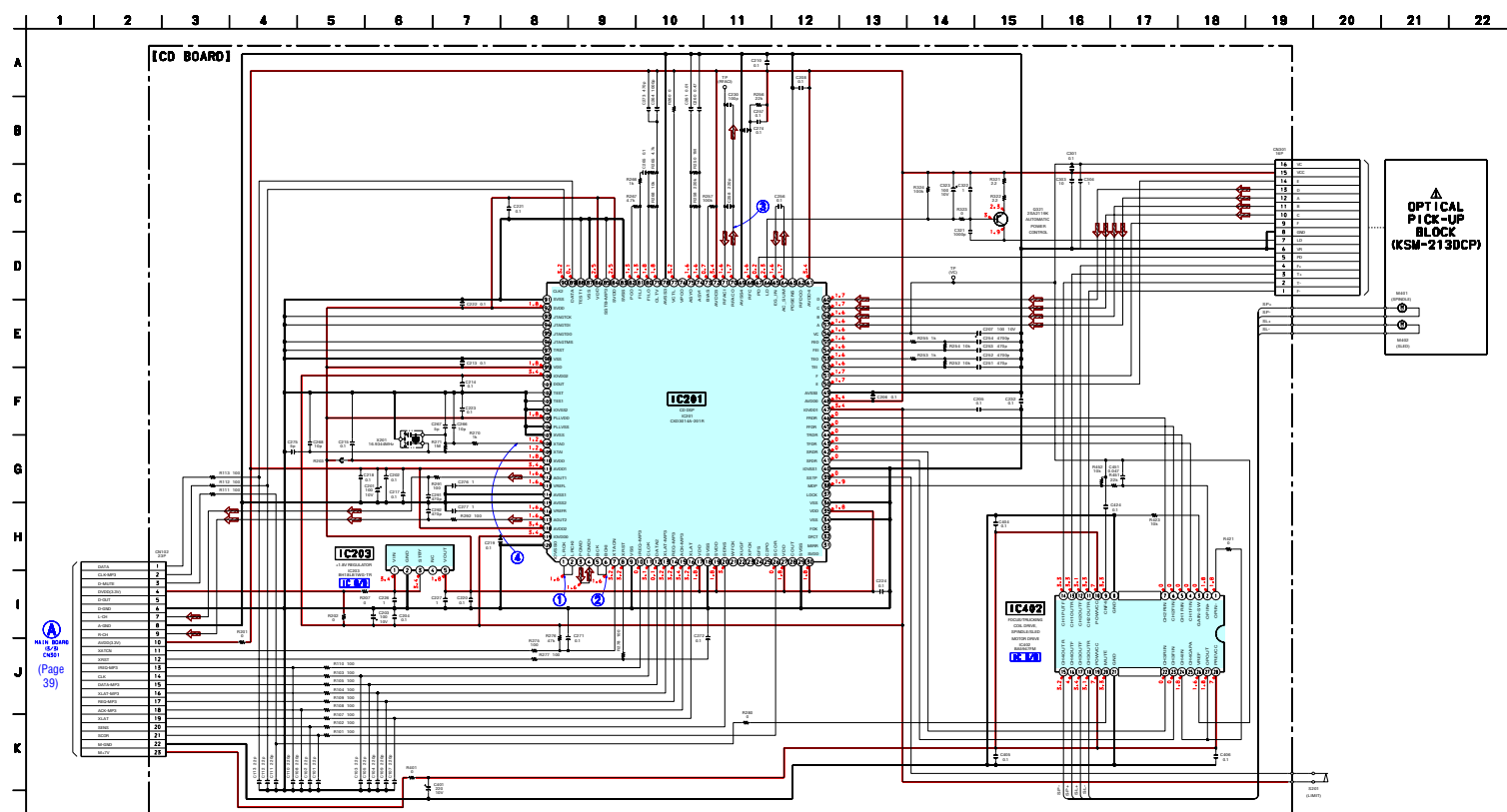
• Abbreviation

- AR : Argentina model
- E2 : 120 V AC area in E model
- E3 : 240 V AC area in E model
- E51 : Chilean and Peruvian models
- MX : Mexican model

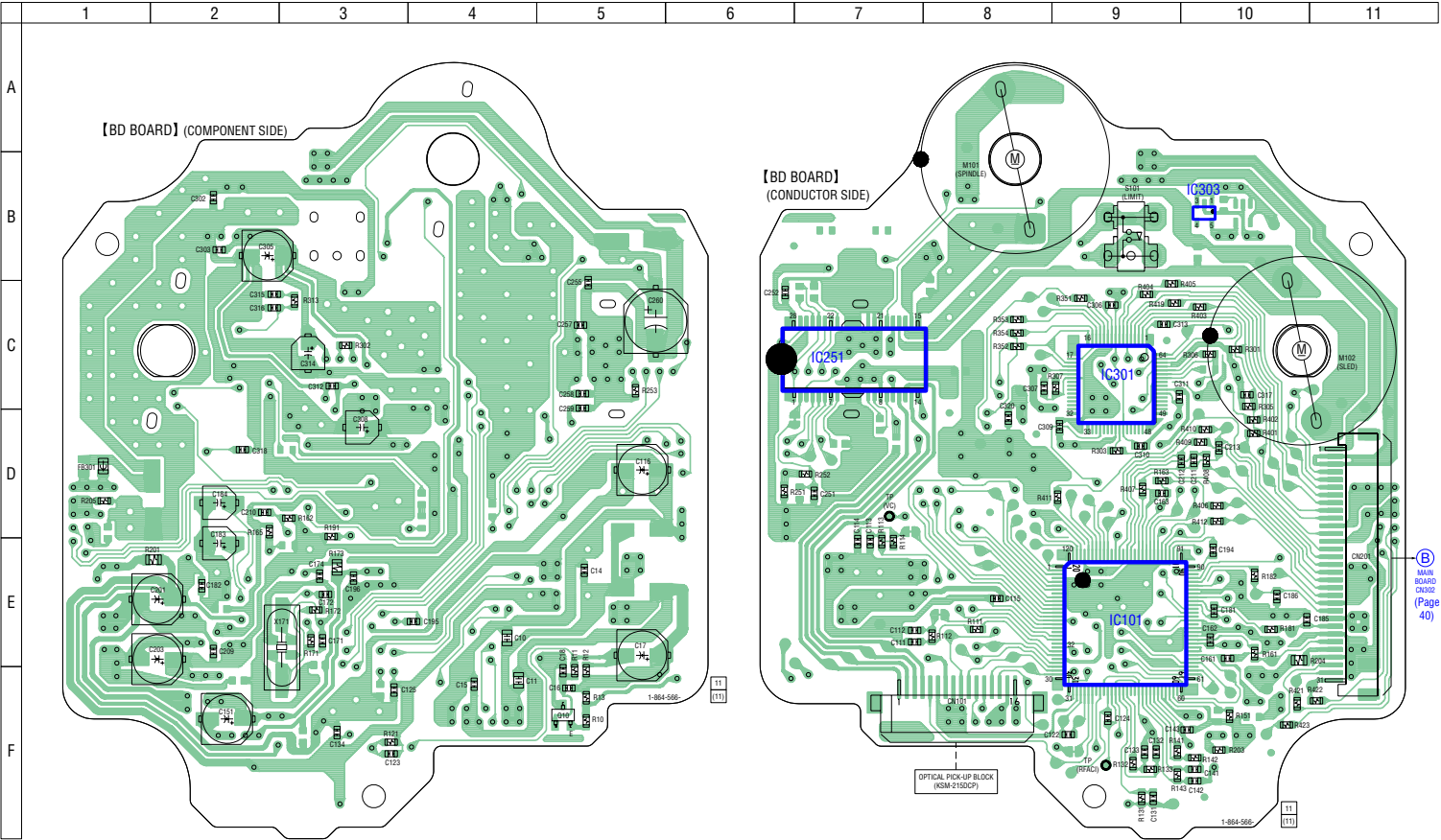
7-5. PRINTED WIRING BOARD – CD Board (Except RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.



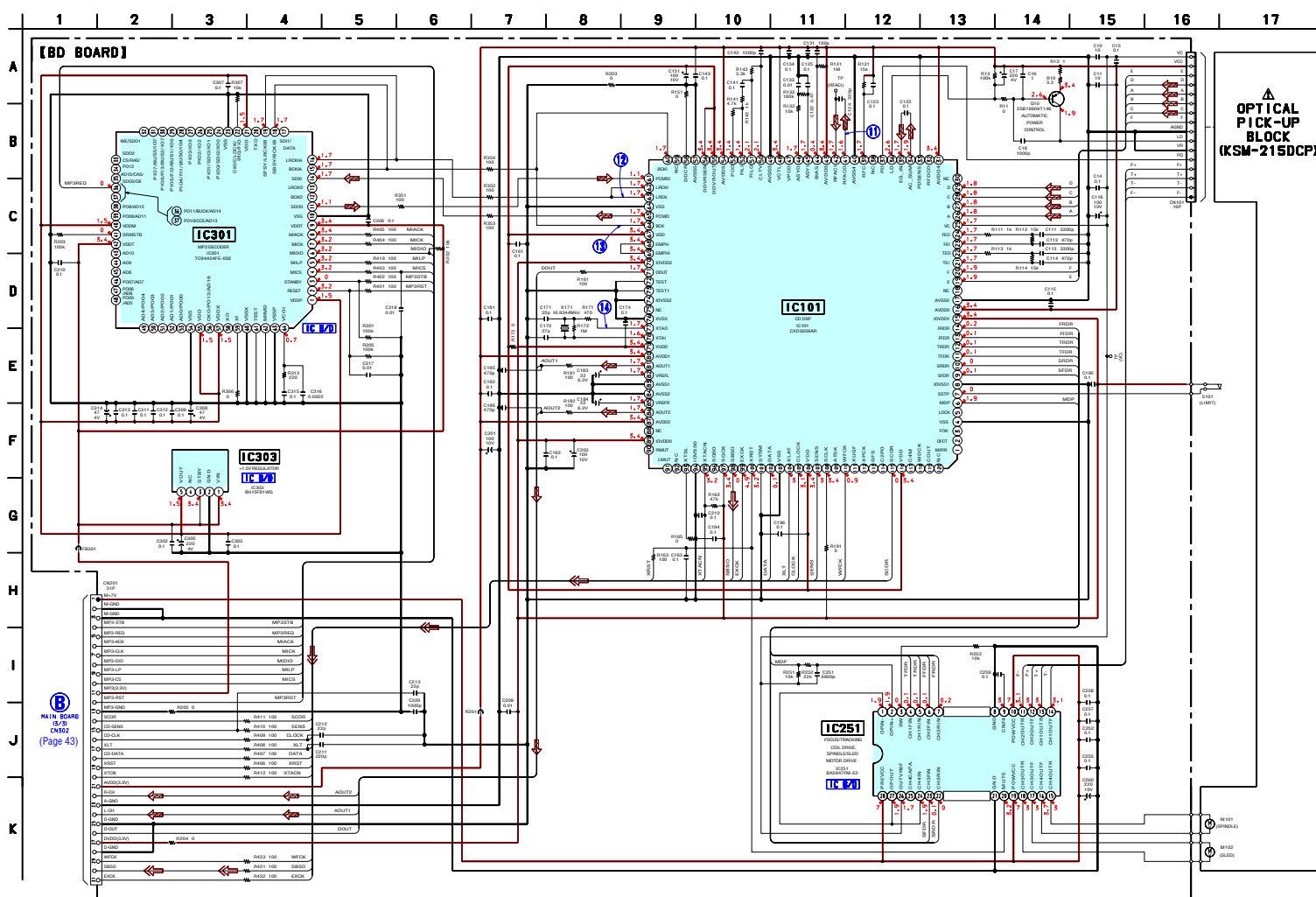
7-6. SCHEMATIC DIAGRAM – CD Board (Except RG490: MX/RG590: MX models) – • See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.



7-7. PRINTED WIRING BOARD – BD Board (RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.



7-8. SCHEMATIC DIAGRAM – BD Board (RG490: MX/RG590: MX models) – • See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.

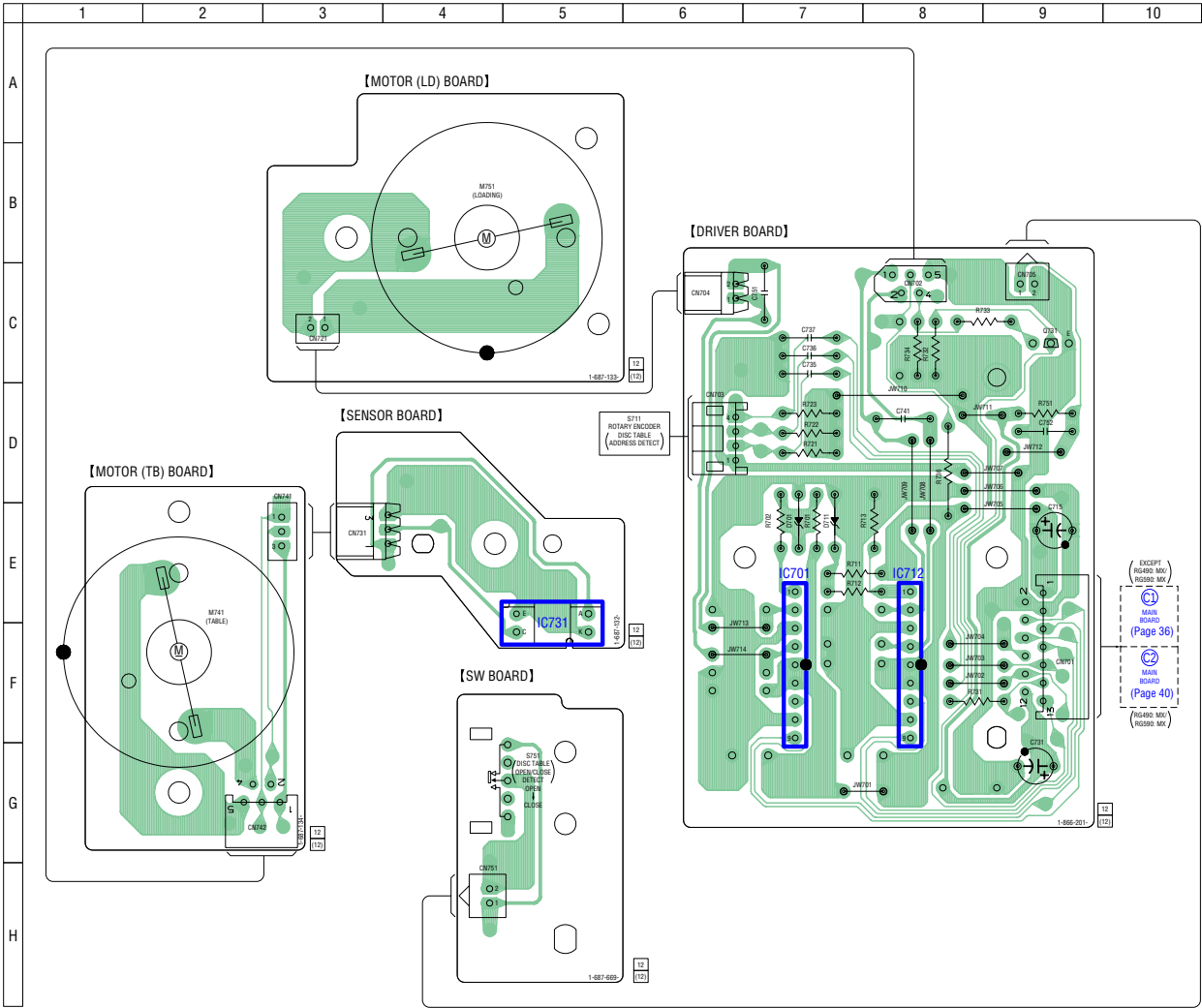


HCD-RG490/RG590

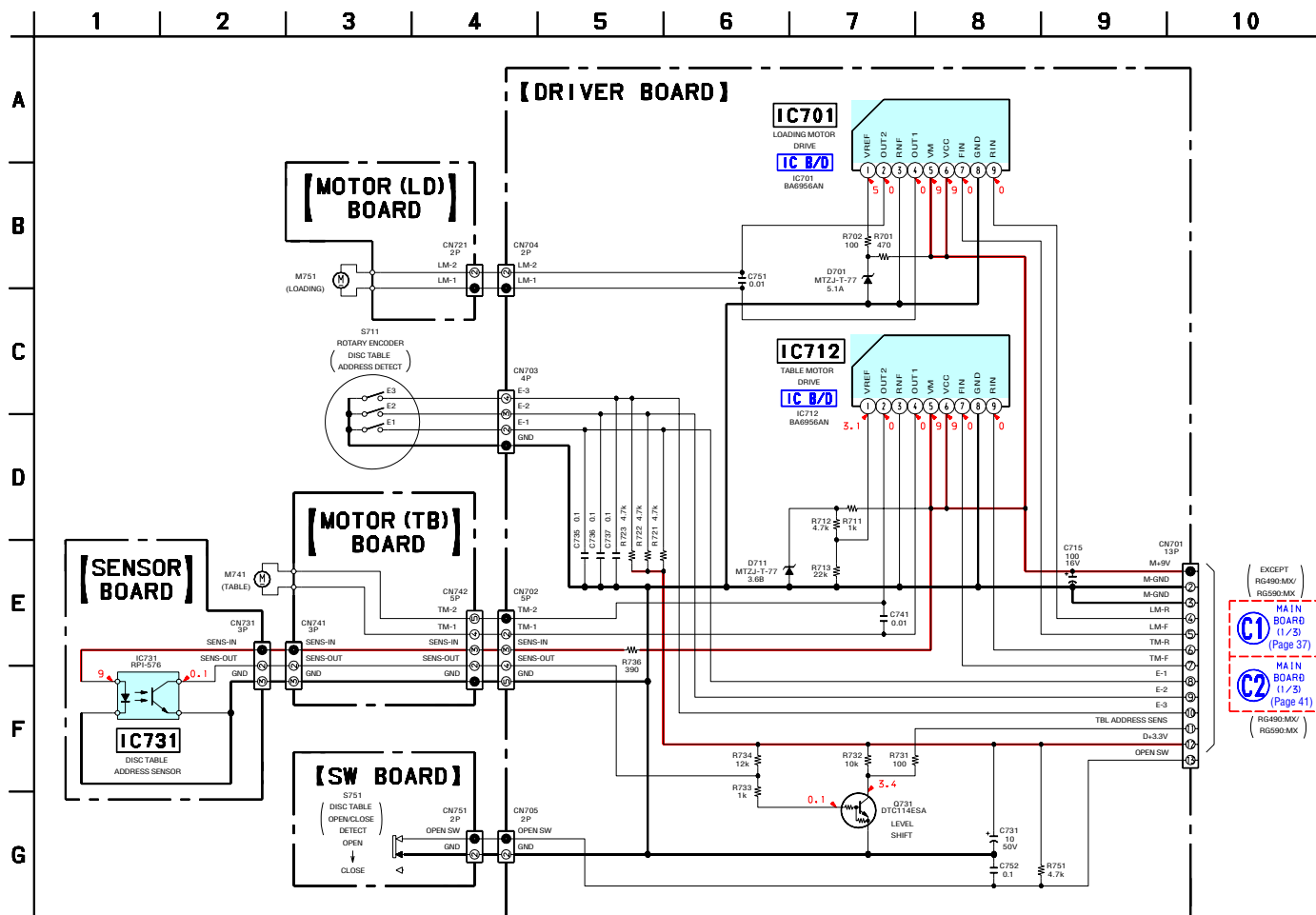
• Semiconductor Location

Ref. No.	Location
D701	E-7
D711	E-7
IC701	F-7
IC712	F-8
IC731	F-5
Q731	C-9

7-9. PRINTED WIRING BOARDS – CHANGER Section – • See page 27 for Circuit Boards Location. : Uses unleaded solder.



7-10. SCHEMATIC DIAGRAM – CHANGER Section – • See page 62 for IC Block Diagrams.

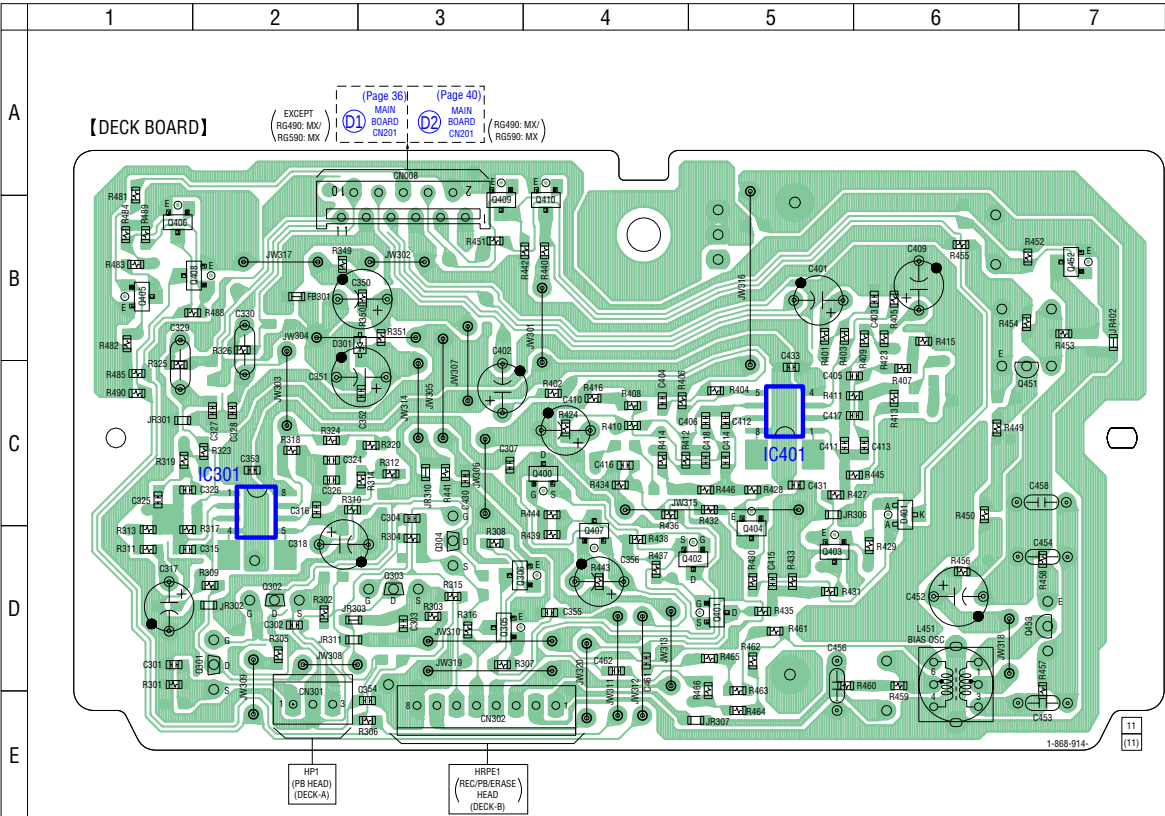


HCD-RG490/RG590

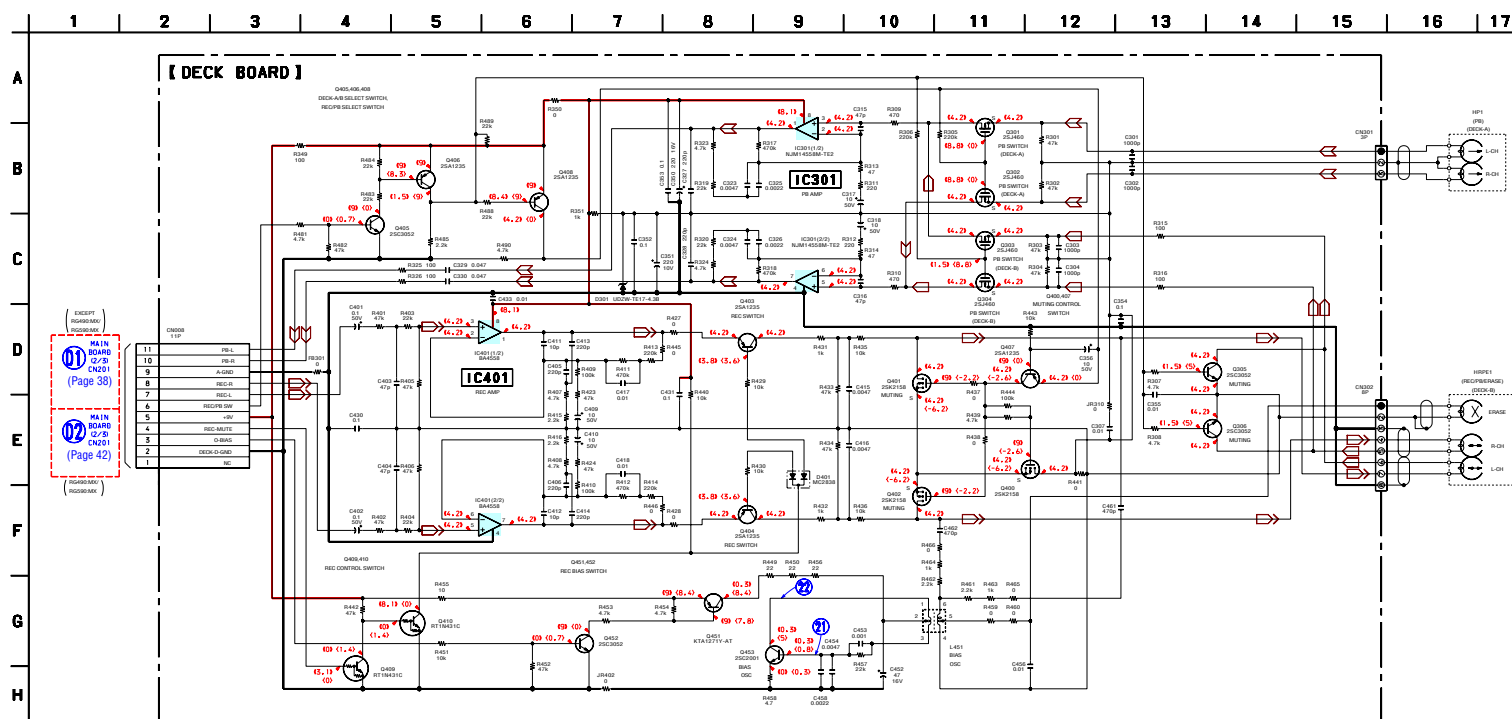
Semiconductor Location

Ref. No.	Location
D301	B-3
D401	C-6
IC301	C-2
IC401	C-5
Q301	D-2
Q302	D-2
Q303	D-3
Q304	D-3
Q305	D-3
Q306	D-3
Q400	C-4
Q401	D-5
Q402	D-5
Q403	D-5
Q404	D-5
Q405	B-1
Q406	B-1
Q407	D-4
Q408	B-2
Q409	B-3
Q410	B-4
Q451	C-7
Q452	B-7
Q453	D-7

7-11. PRINTED WIRING BOARD – DECK Board – See page 27 for Circuit Boards Location. : Uses unleaded solder.



7-12. SCHEMATIC DIAGRAM – DECK Board – • See page 57 for Waveforms.



HCD-RG490/RG590

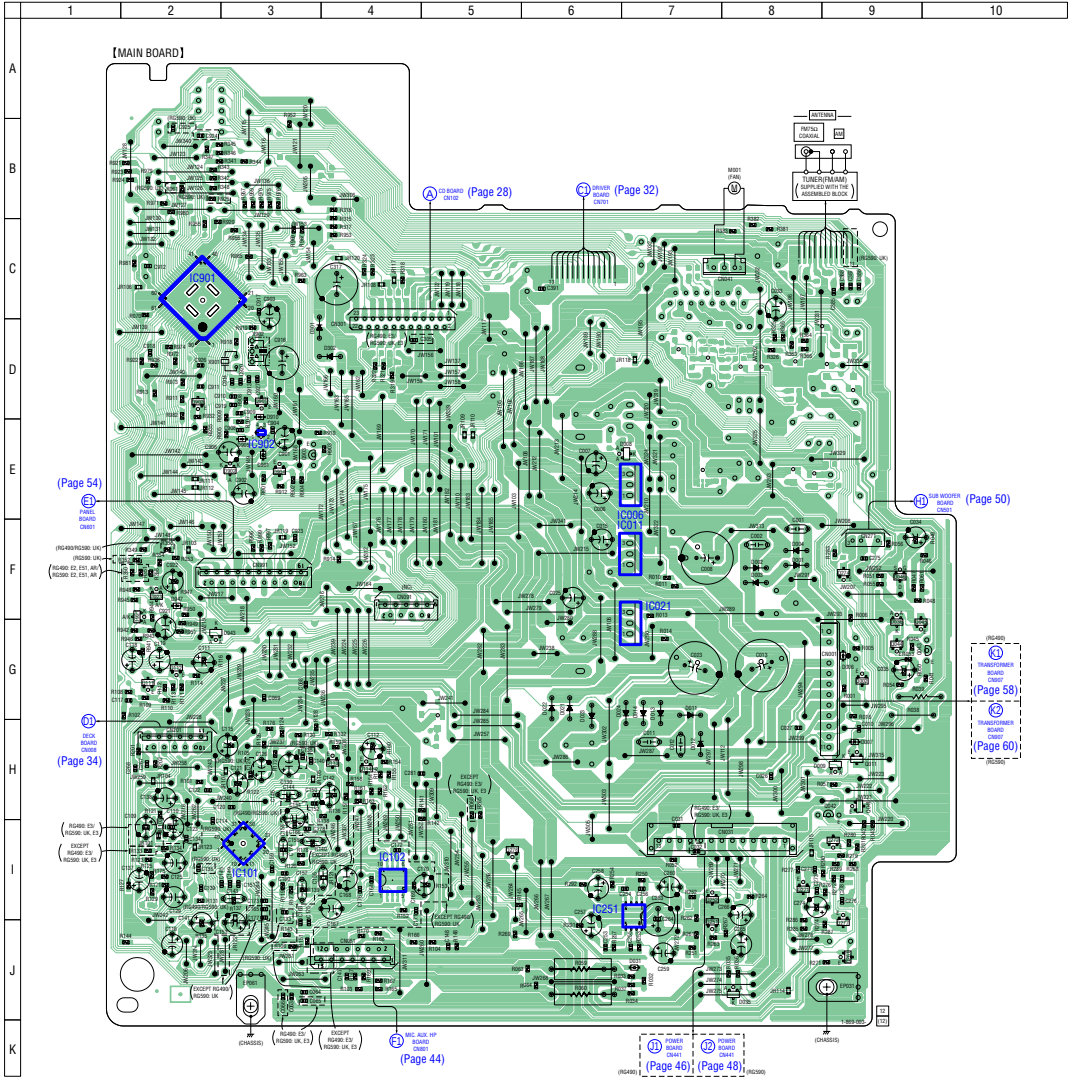
7-13. PRINTED WIRING BOARD – MAIN Board (Except RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.

• Semiconductor Location

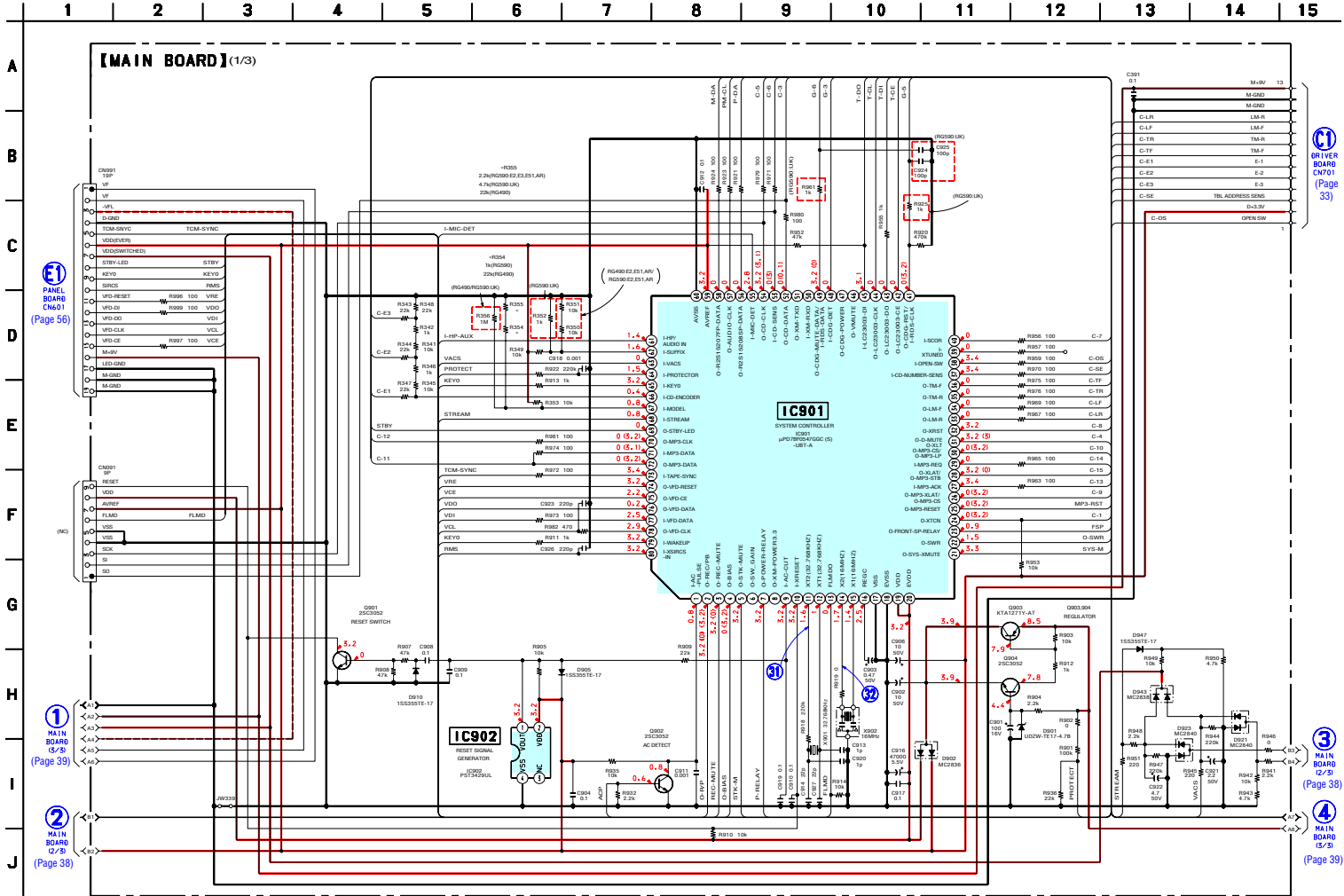
Ref. No.	Location
D001	F-8
D002	F-8
D003	F-8
D004	F-8
D006	G-9
D007	H-9
D008	E-7
D009	H-9
D011	G-7
D012	H-7
D013	G-7
D014	G-7
D021	G-6
D022	G-6
D023	G-6
D024	G-7
D031	J-7
D035	J-8
D036	G-9
D301	D-3
D302	D-4
D901	E-3
D902	E-3
D905	E-3
D910	D-3
D921	F-2
D923	F-2
D943	G-2
D947	F-2
IC006	E-7
IC011	F-7
IC021	G-7
IC101	I-3
IC102	I-4
IC251	I-7
IC901	C-2
IC902	E-3
Q002	G-9
Q011	H-9
Q041	H-9
Q042	H-9
Q043	G-9
Q044	G-9
Q045	G-9
Q046	F-9
Q111	G-2
Q112	G-2
Q113	H-4
Q114	H-4
Q251	J-7
Q252	I-7
Q261	J-9
Q271	I-8
Q272	I-9
Q274	F-9
Q276	I-5
Q277	J-9
Q901	D-3
Q902	D-2
Q903	E-3
Q904	E-3

Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

HCD-RG490/RG590

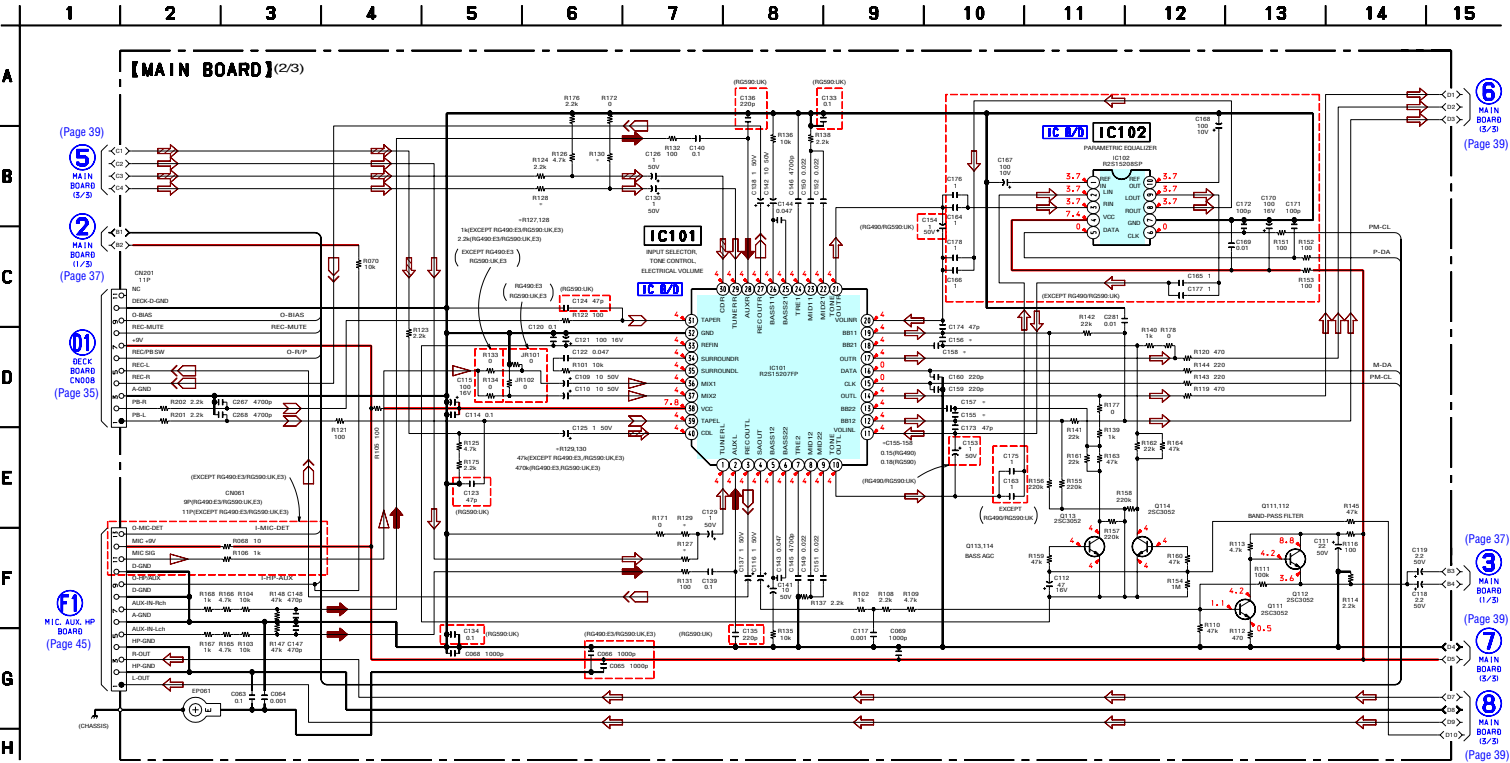


7-14. SCHEMATIC DIAGRAM – MAIN Board (1/3) (Except RG490: MX/RG590: MX models) – • See page 57 for Waveforms. • See page 66 for IC Pin Function Description.

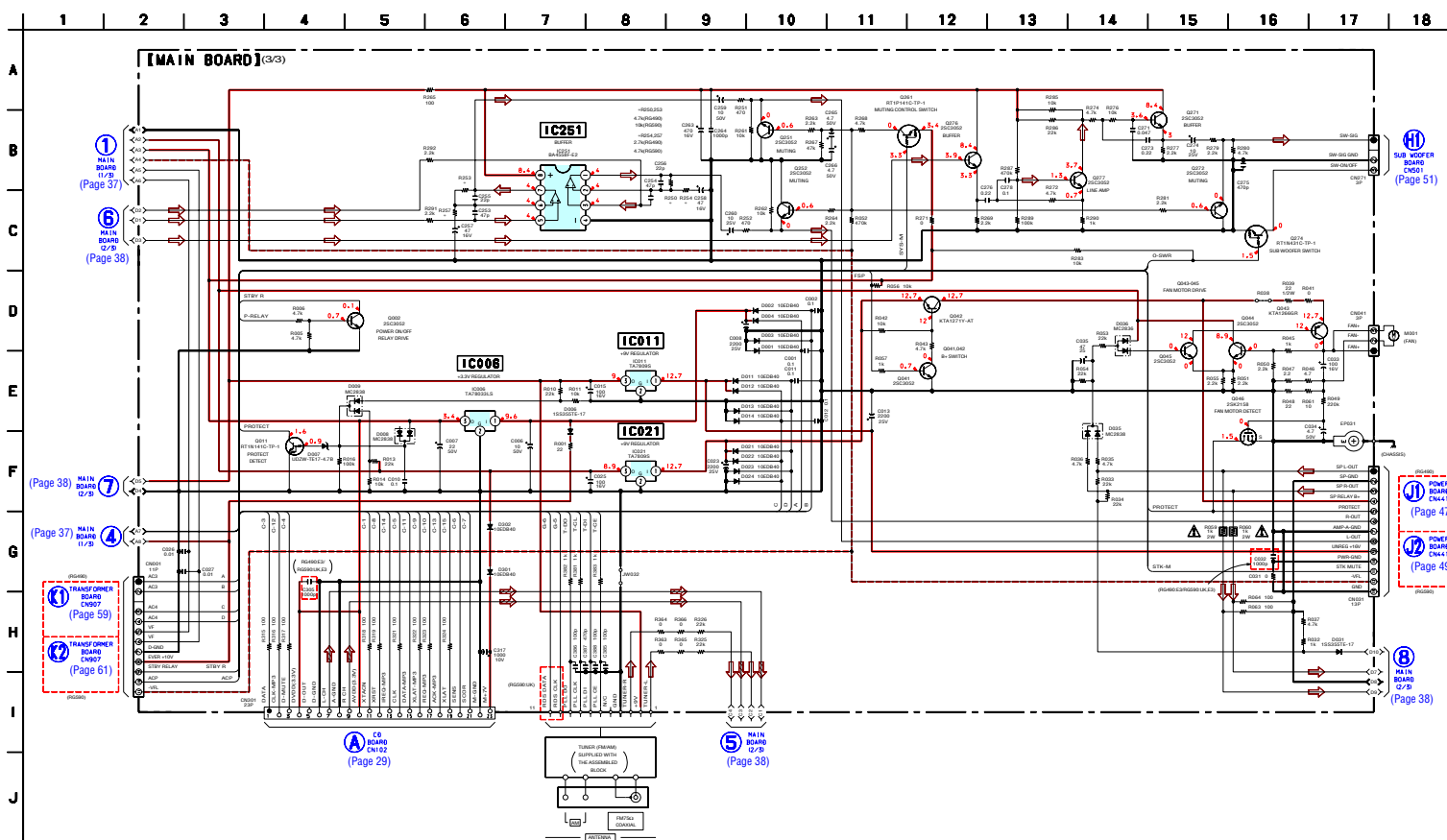


Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

7-15. SCHEMATIC DIAGRAM – MAIN Board (2/3) (Except RG490: MX/RG590: MX models) – • See page 62 for IC Block Diagrams.



7-16. SCHEMATIC DIAGRAM – MAIN Board (3/3) (Except RG490: MX/RG590: MX models) –



HCD-RG490/RG590

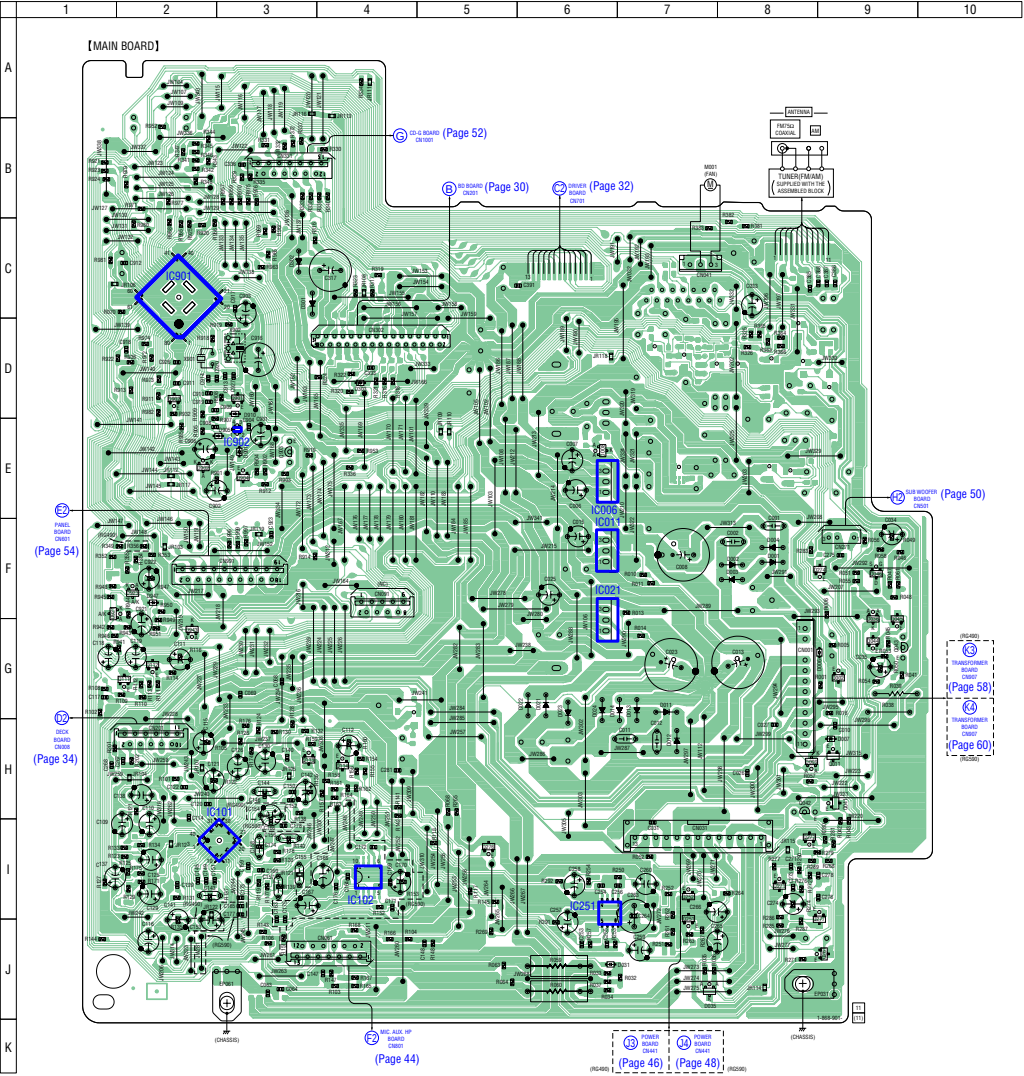
7-17. PRINTED WIRING BOARD – MAIN Board (RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.

• Semiconductor Location

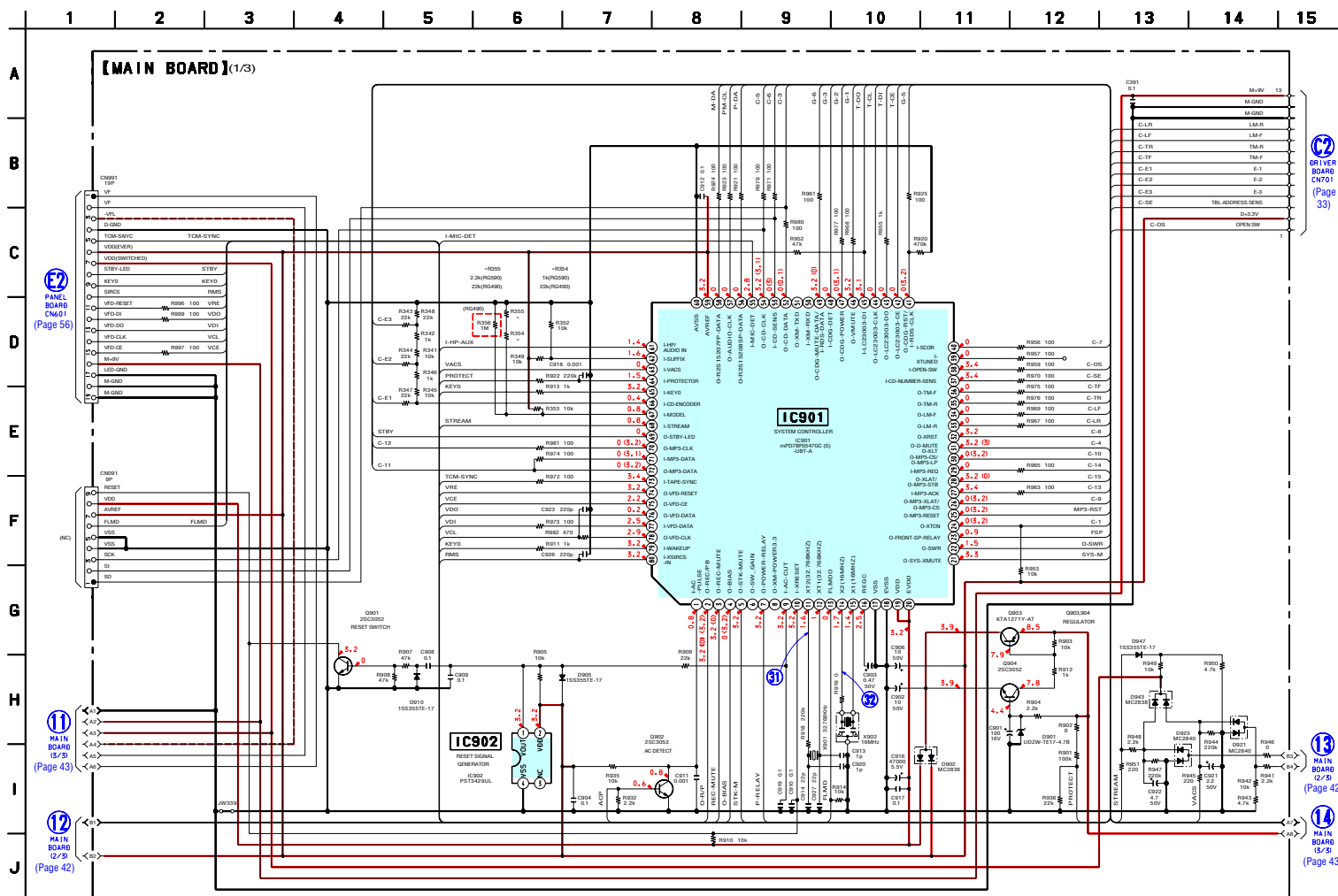
Ref. No.	Location
D001	F-8
D002	F-8
D003	F-8
D004	F-8
D006	G-9
D007	H-9
D008	E-6
D009	H-8
D011	G-7
D012	H-7
D013	G-7
D014	G-7
D021	G-6
D022	G-6
D023	G-6
D024	G-6
D031	J-6
D035	J-7
D036	G-9
D301	C-3
D302	C-3
D303	D-4
D901	E-3
D902	E-2
D905	E-3
D910	D-3
D921	F-1
D923	F-2
D943	G-2
D947	F-2
IC006	E-6
IC011	F-6
IC021	G-6
IC101	I-3
IC102	I-4
IC251	I-6
IC901	C-2
IC902	E-3
Q002	G-9
Q011	H-9
Q041	H-9
Q042	H-8
Q043	G-9
Q044	G-9
Q045	G-9
Q046	F-9
Q111	G-2
Q112	G-2
Q113	H-3
Q114	H-4
Q251	I-7
Q252	I-7
Q261	J-9
Q271	I-8
Q272	I-8
Q274	F-9
Q276	I-5
Q277	J-9
Q901	D-3
Q902	D-2
Q903	E-3
Q904	E-3

Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

HCD-RG490/RG590

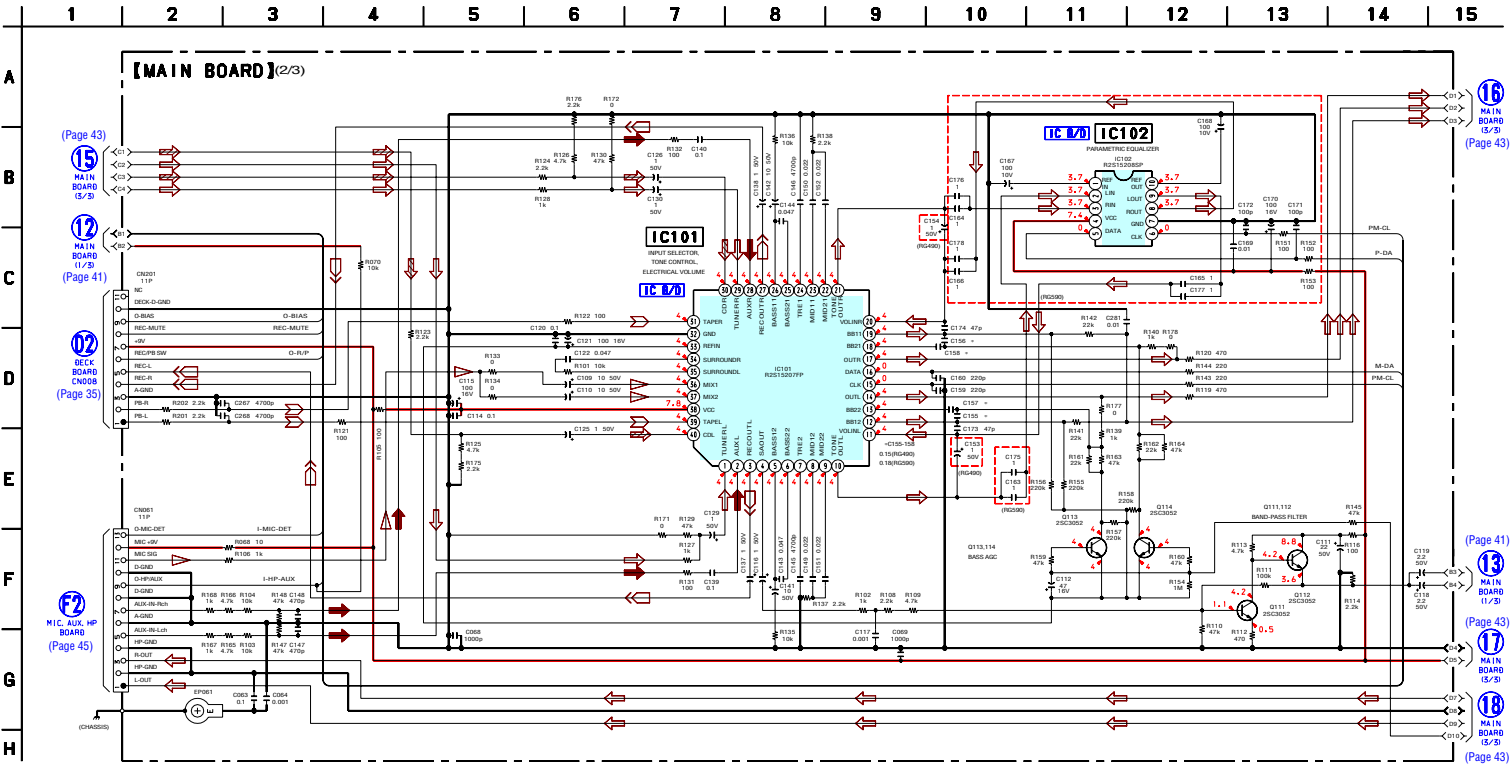


7-18. SCHEMATIC DIAGRAM – MAIN Board (1/3) (RG490: MX/RG590: MX models) – • See page 57 for Waveforms. • See page 66 for IC Pin Function Description.

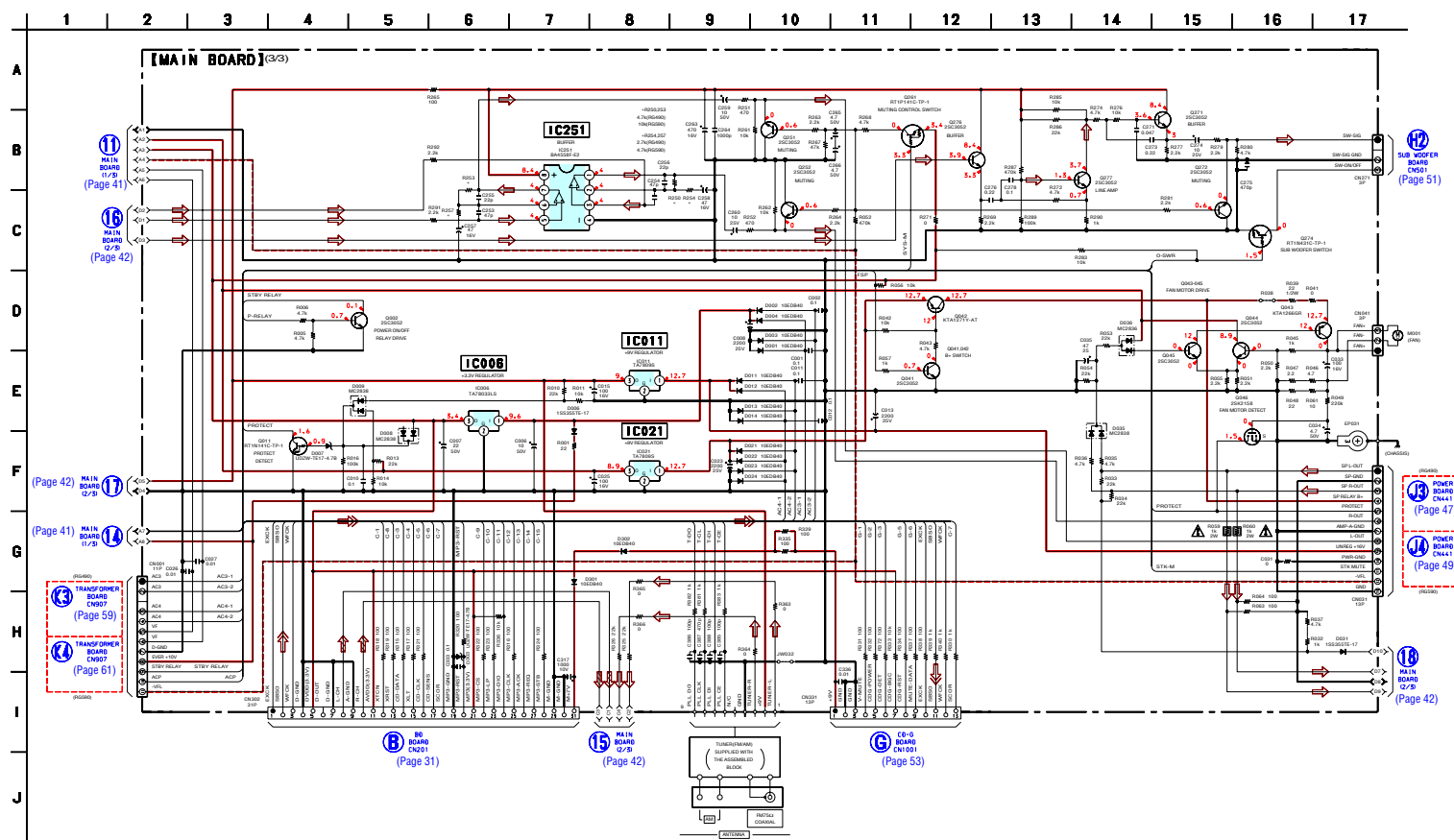


Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

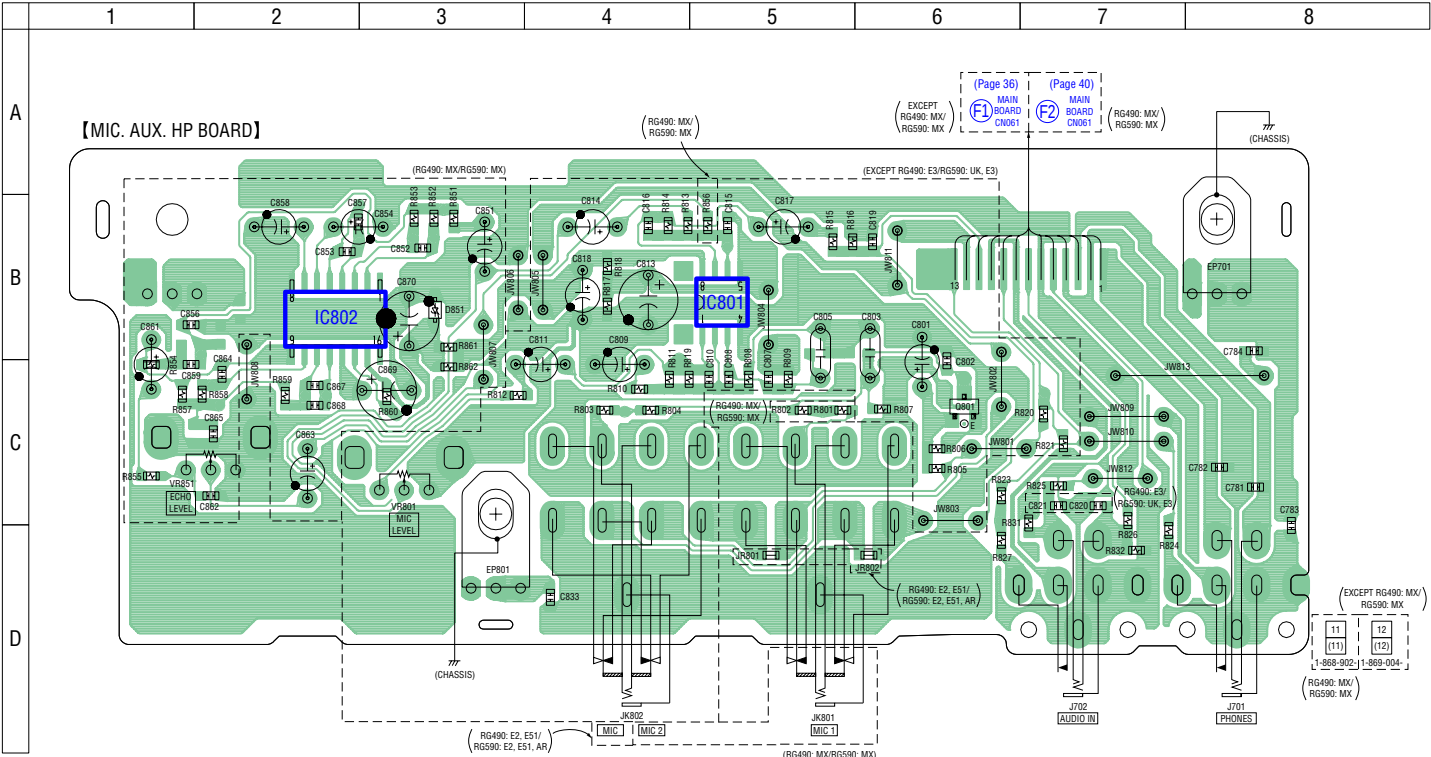
7-19. SCHEMATIC DIAGRAM – MAIN Board (2/3) (RG490: MX/RG590: MX models) – • See page 62 for IC Block Diagrams.



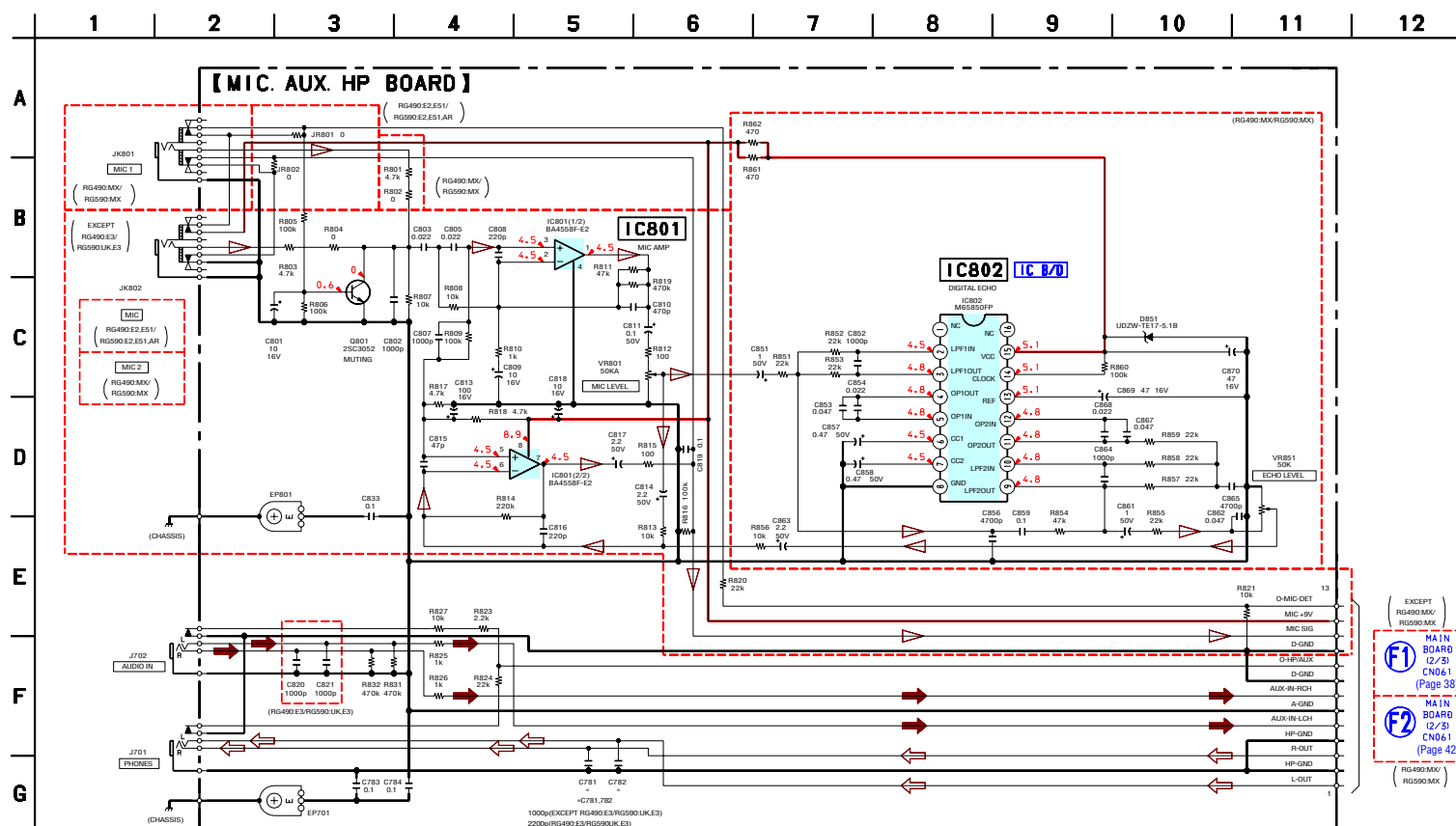
7-20. SCHEMATIC DIAGRAM – MAIN Board (3/3) (RG490: MX/RG590: MX models) –



7-21. PRINTED WIRING BOARD – MIC. AUX. HP Board – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.

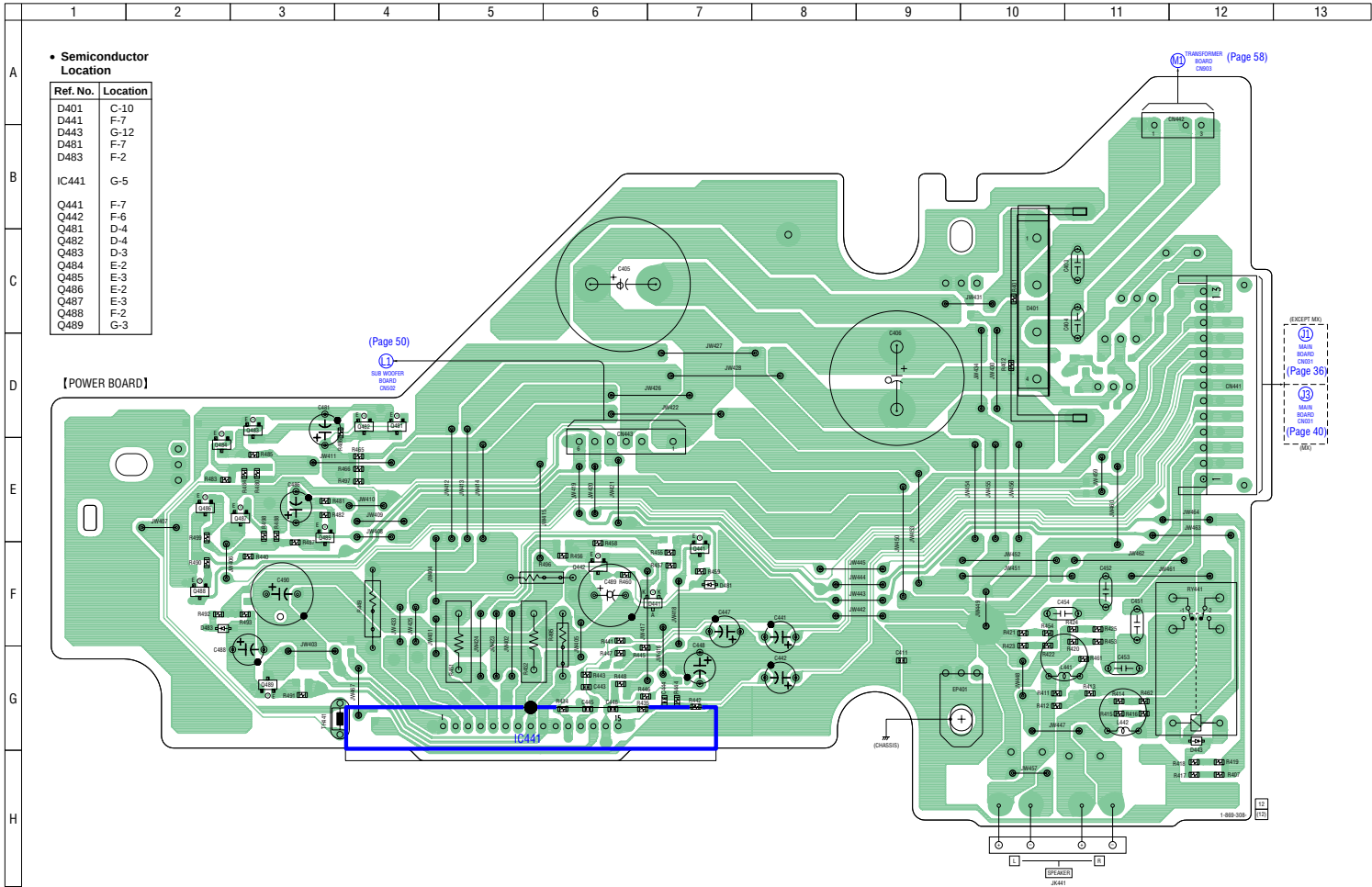


7-22. SCHEMATIC DIAGRAM – MIC. AUX. HP Board – • See page 62 for IC Block Diagrams.

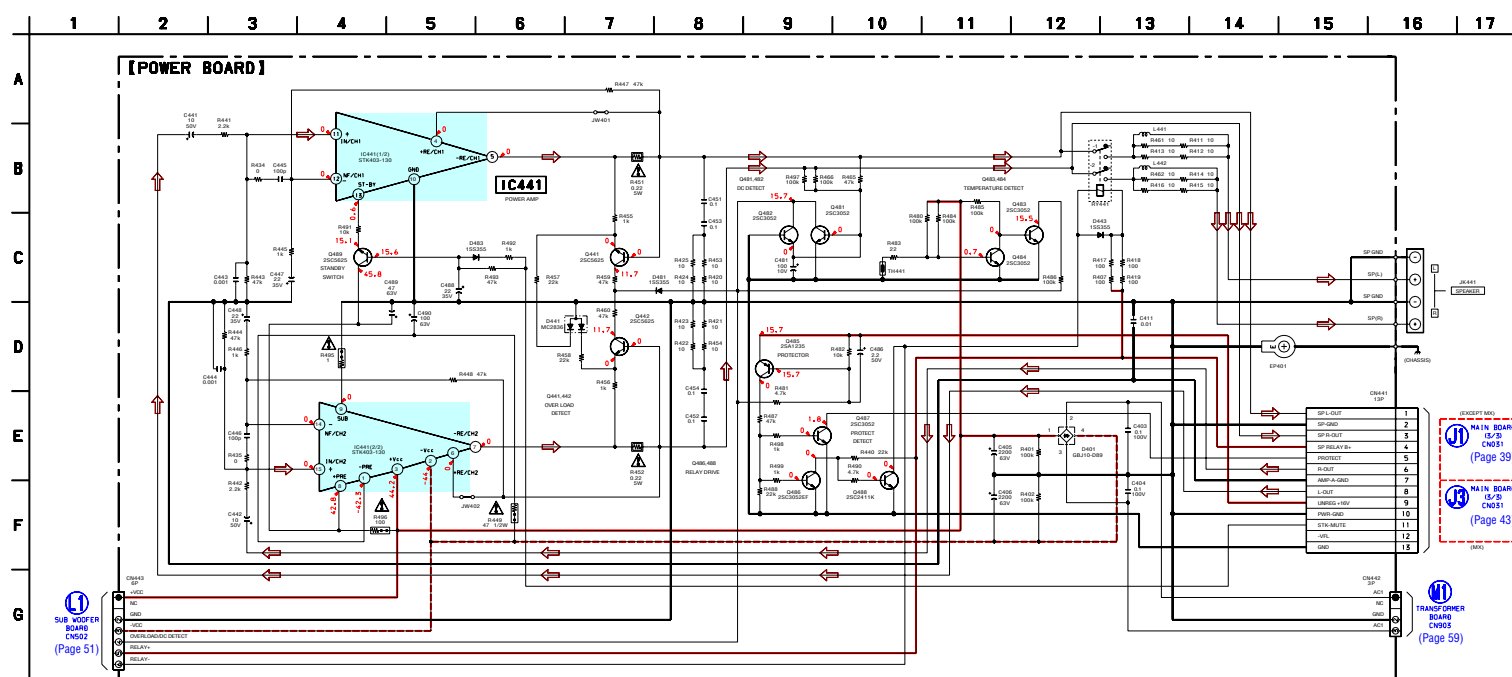


HCD-RG490/RG590

7-23. PRINTED WIRING BOARD – POWER Board (RG490) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.



7-24. SCHEMATIC DIAGRAM – POWER Board (RG490) –

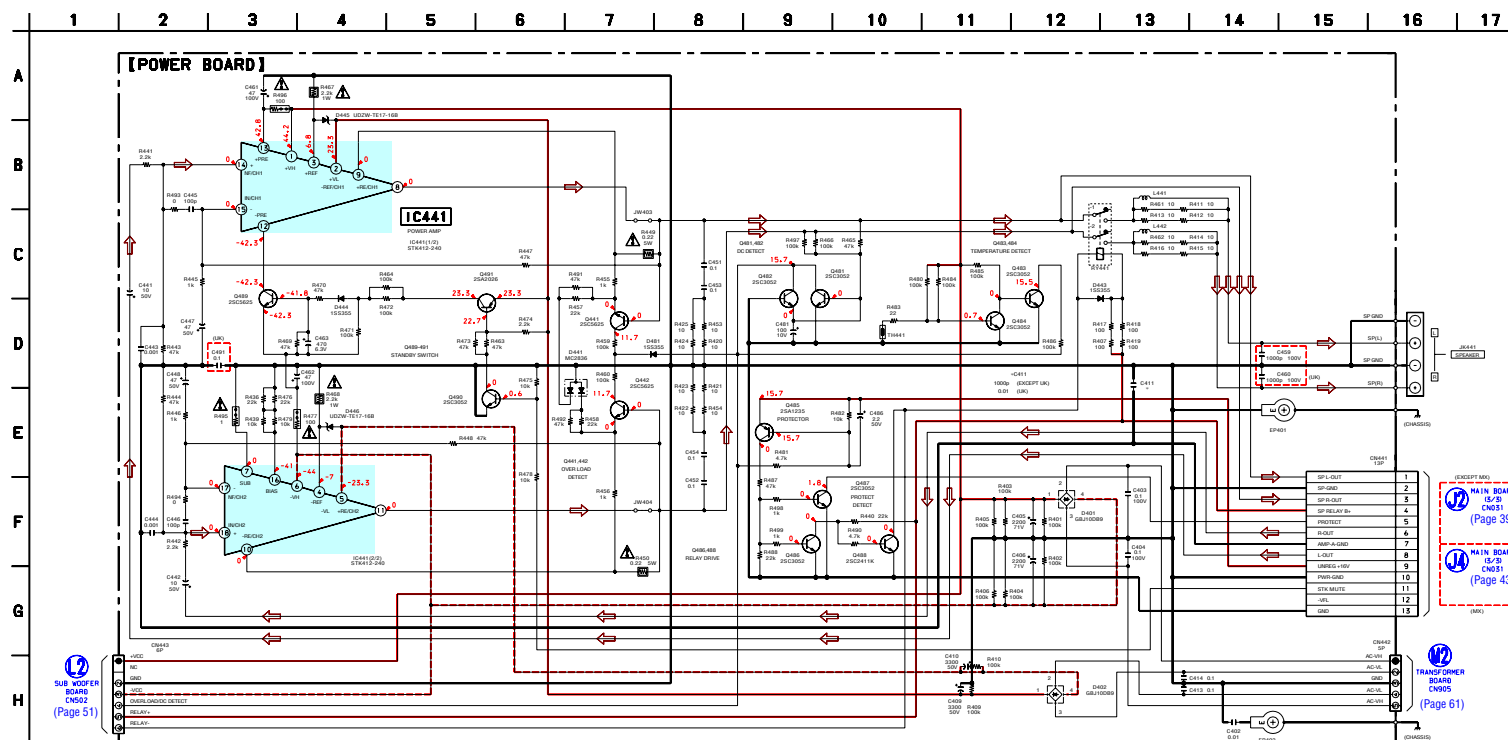


HCD-RG490/RG590

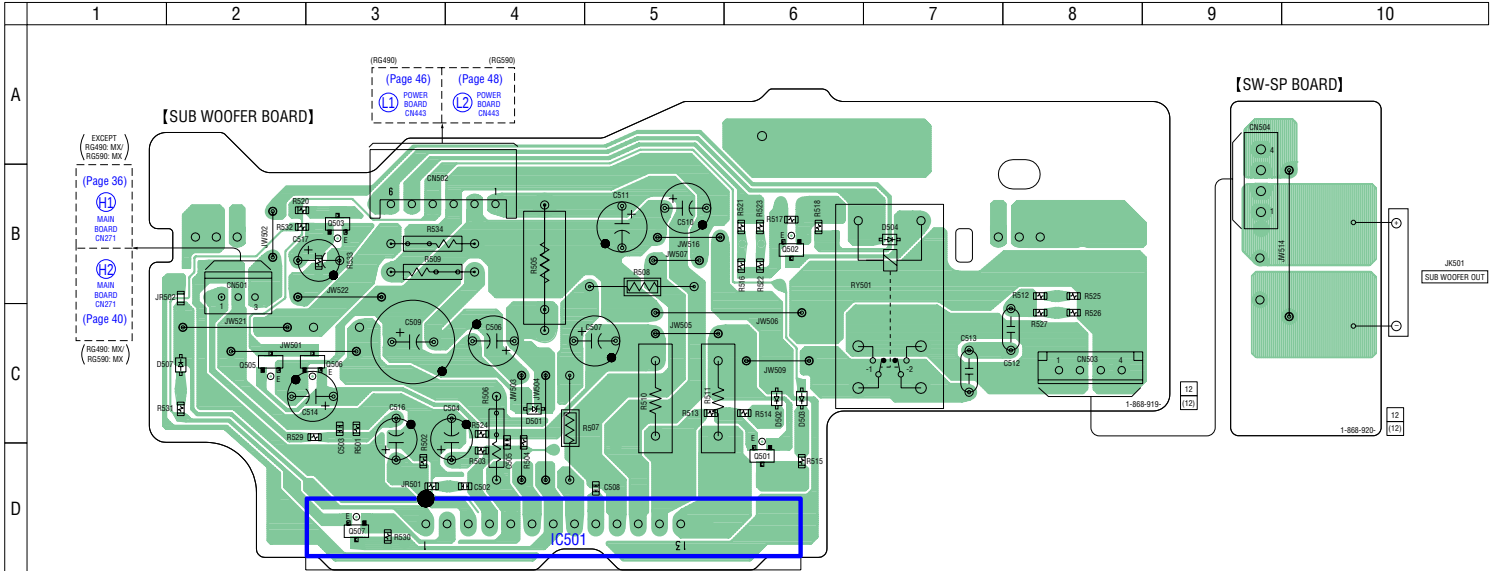
48 48



7-26. SCHEMATIC DIAGRAM - POWER Board (RG590) -



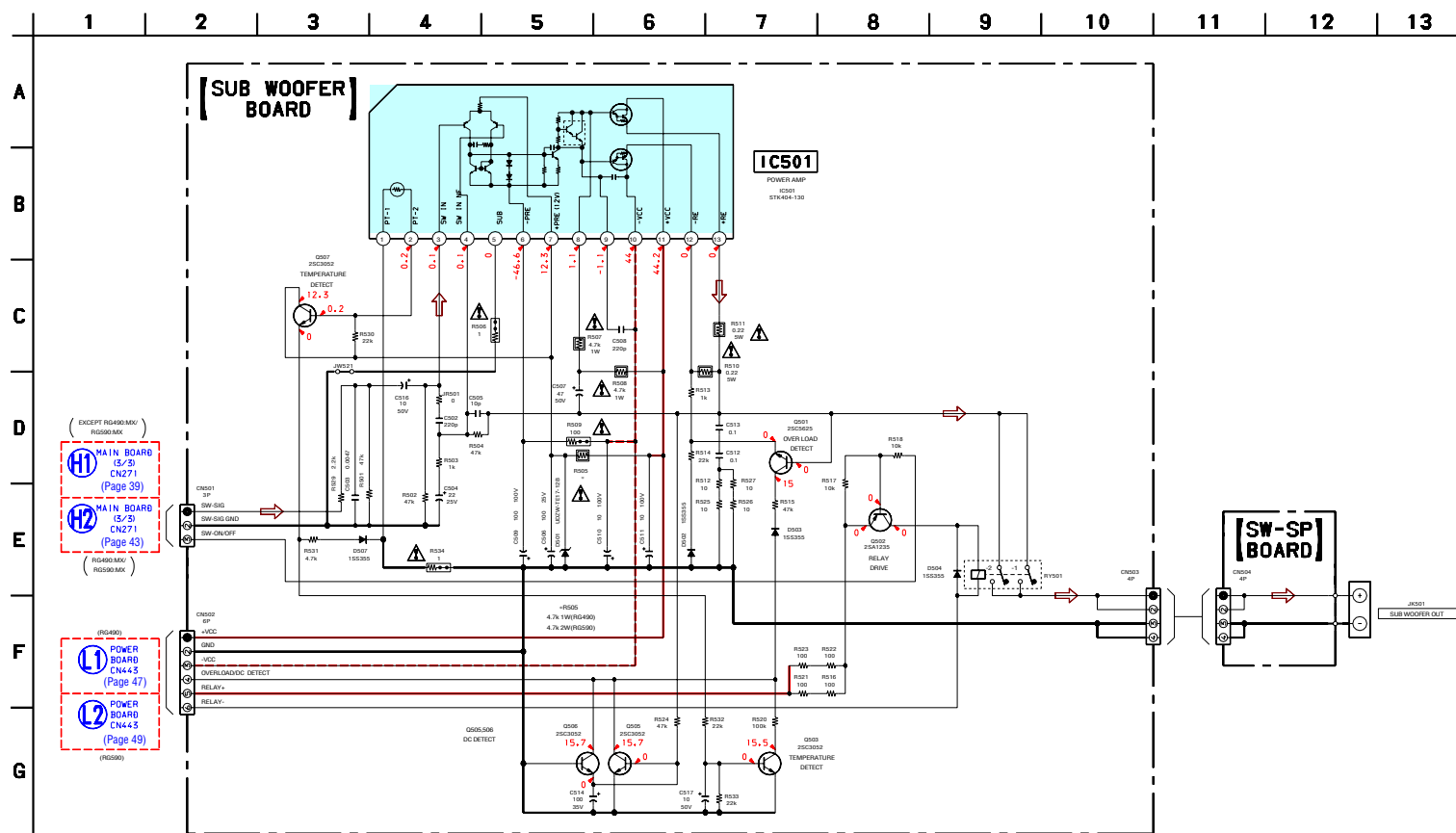
7-27. PRINTED WIRING BOARDS – SUB WOOFER Section – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.



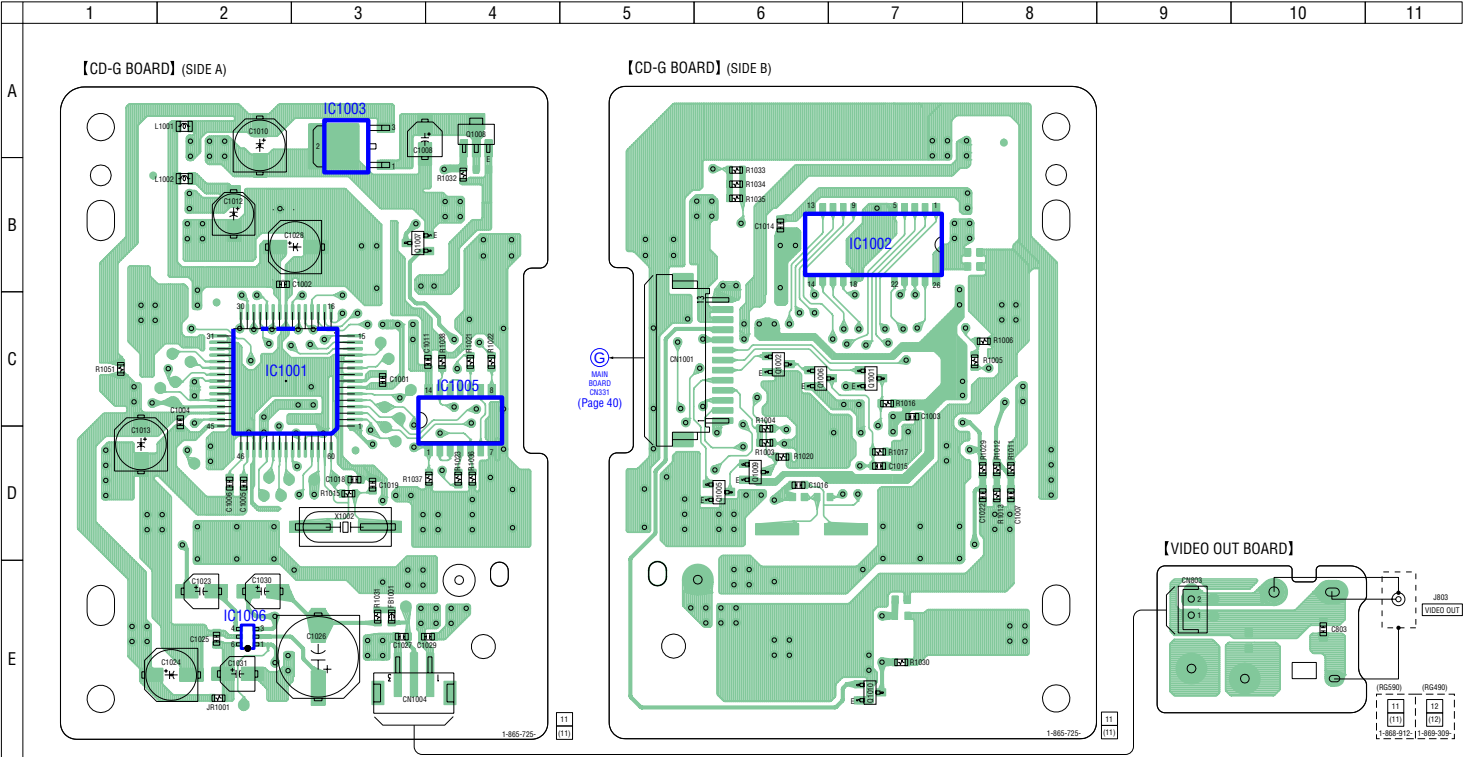
• Semiconductor Location

Ref. No.	Location
D501	C-4
D502	C-6
D503	C-6
D504	B-7
D507	C-2
IC501	D-4
Q501	D-6
Q502	B-6
Q503	B-3
Q506	C-3
Q507	D-3

7-28. SCHEMATIC DIAGRAM – SUB WOOFER Section –



7-29. PRINTED WIRING BOARDS – CD-G Section (RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location.  : Uses unloaded solder.

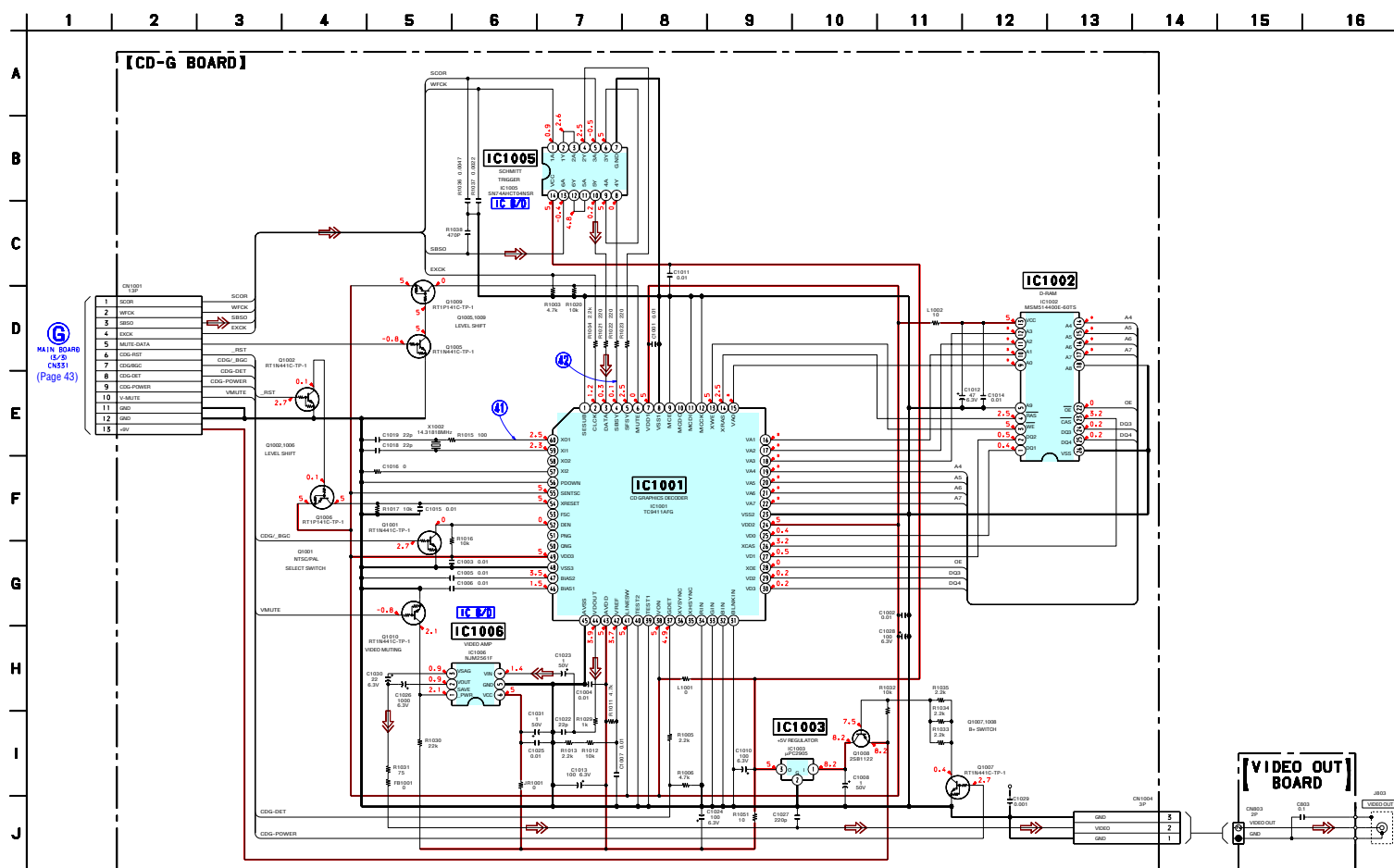


• Semiconductor Location

Ref. No.	Location
IC1001	C-2
IC1002	B-7
IC1003	A-3
IC1005	C-4
IC1006	E-2
Q1001	C-7
Q1002	C-6
Q1005	D-6
Q1006	C-6
Q1007	B-3
Q1008	A-4
Q1009	D-6
Q1010	E-7

7-30. SCHEMATIC DIAGRAM – CD-G Section (RG490: MX/RG590: MX models) –

• See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.

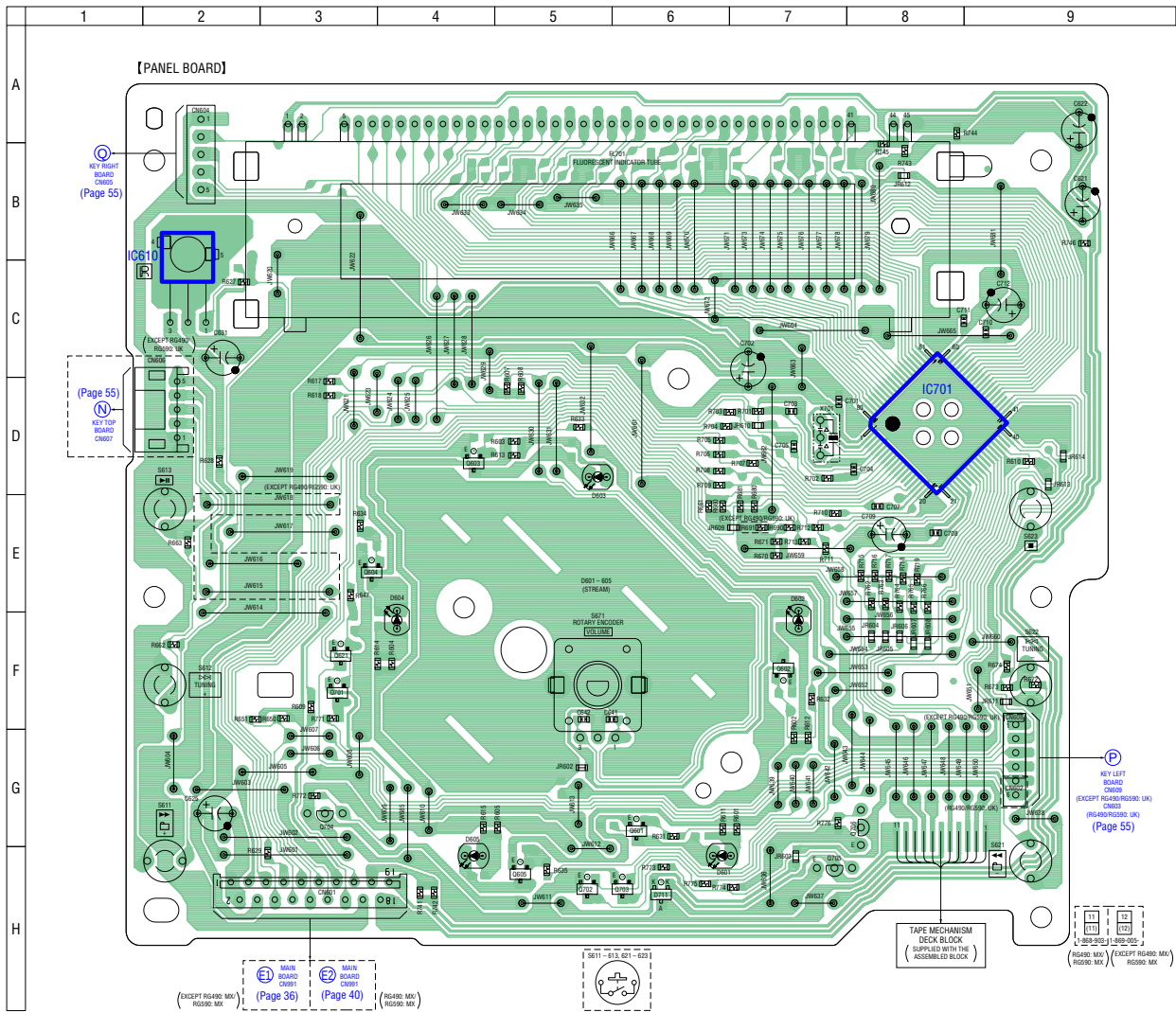


HCD-RG490/RG590

7-31. PRINTED WIRING BOARD – PANEL Board – • See page 27 for Circuit Boards Location. : Uses unleaded solder.

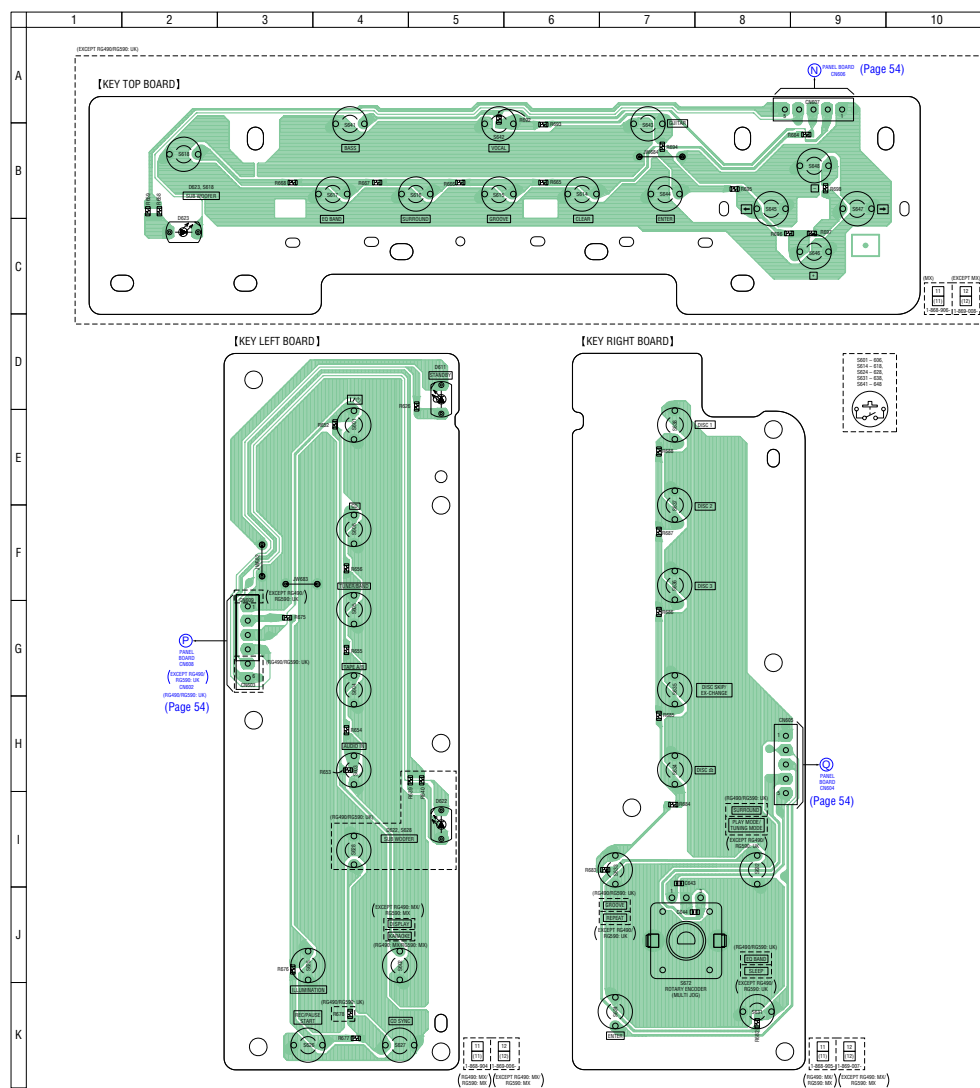
- Semiconductor Location

Ref. No.	Location
D601	H-6
D602	F-7
D603	D-5
D604	F-4
D605	H-4
D711	H-6
IC610	B-1
IC701	D-8
Q601	G-6
Q602	F-7
Q603	D-4
Q604	E-3
Q605	H-5
Q621	F-3
Q701	F-3
Q702	H-5
Q703	H-6
Q704	G-3
Q705	H-7
Q706	G-8

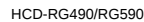


HCD-RG490/RG590

7-32. PRINTED WIRING BOARDS – KEY Section – • See page 27 for Circuit Boards Location. : Uses unleaded solder.

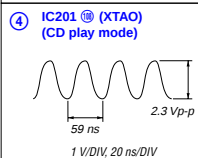
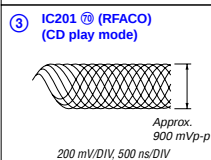
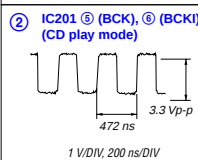
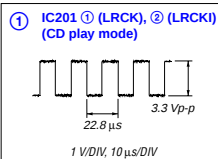


7-33. SCHEMATIC DIAGRAM – PANEL/KEY Section – • See page 57 for Waveforms. • See page 66 for IC Pin Function Description.

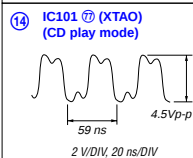
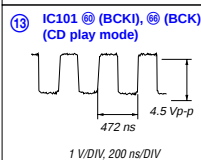
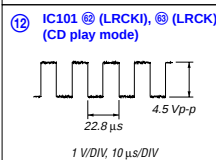
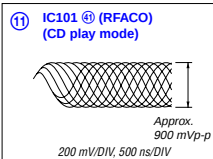


• Waveforms

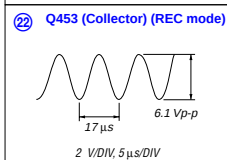
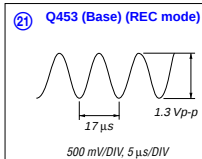
– CD Board –



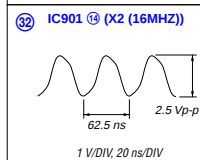
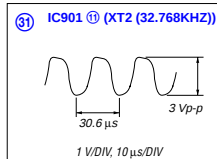
– BD Board –



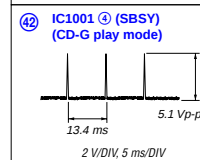
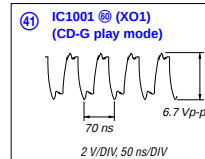
– DECK Board –



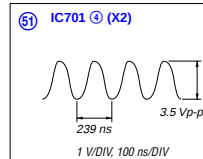
– MAIN Board –



– CD-G Board –

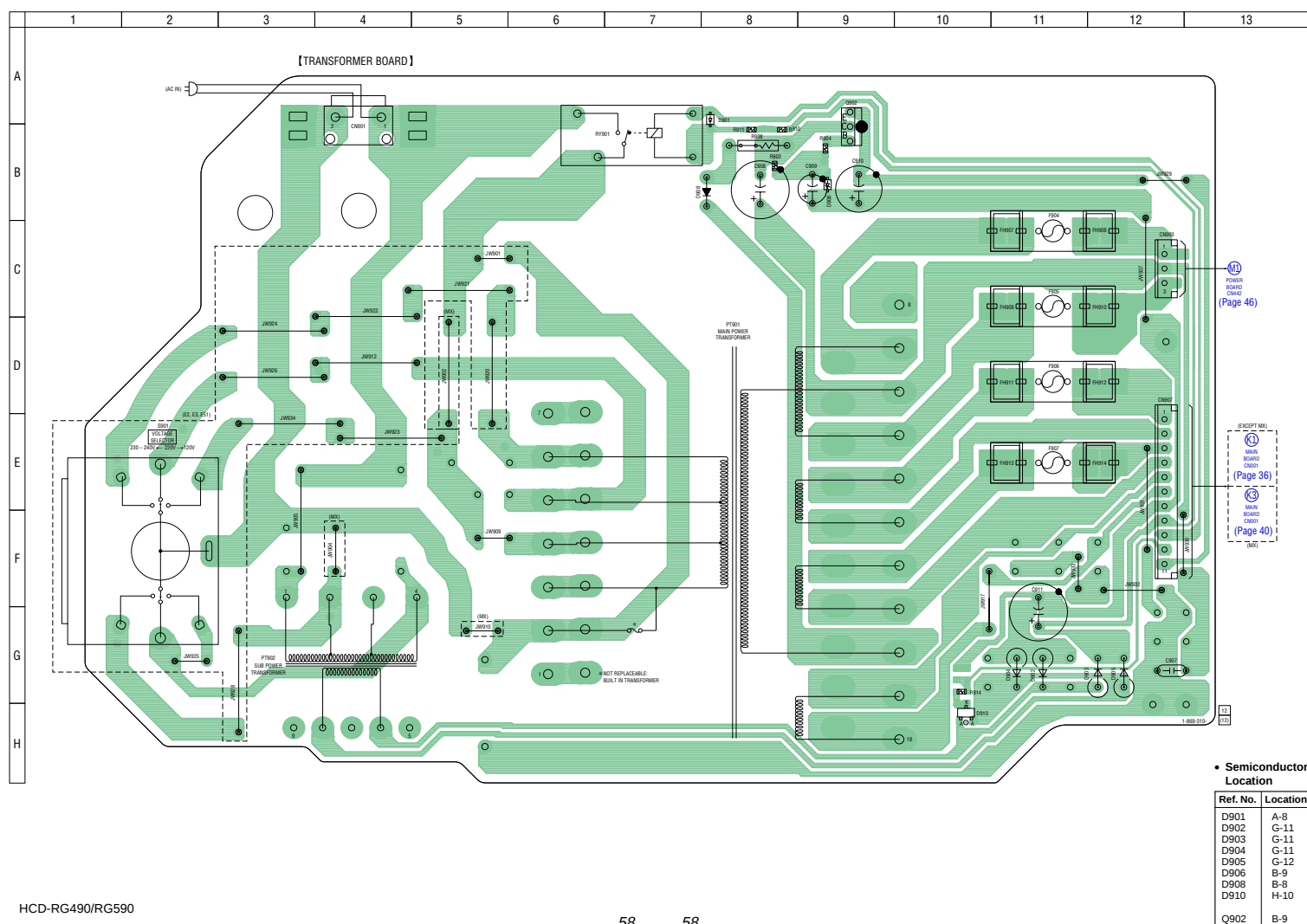


– PANEL Board –

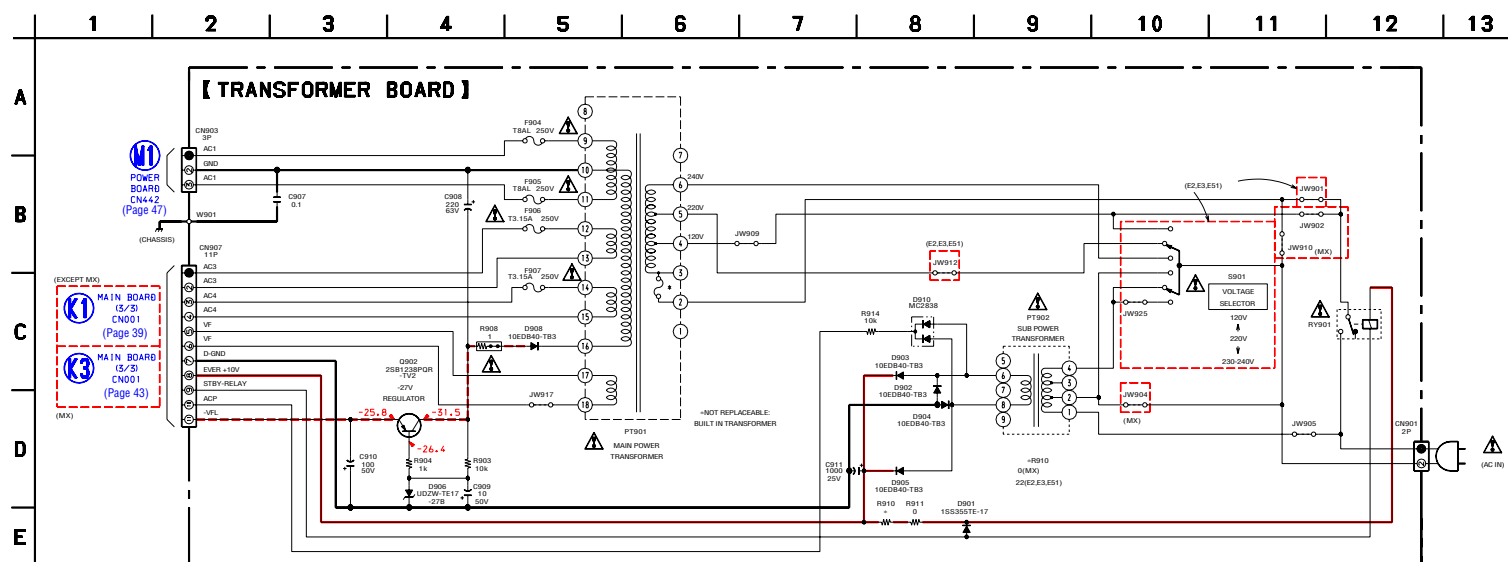


HCD-RG490/RG590

7-34. PRINTED WIRING BOARD – TRANSFORMER Board (RG490) – • See page 27 for Circuit Boards Location. : Uses unleaded solder.

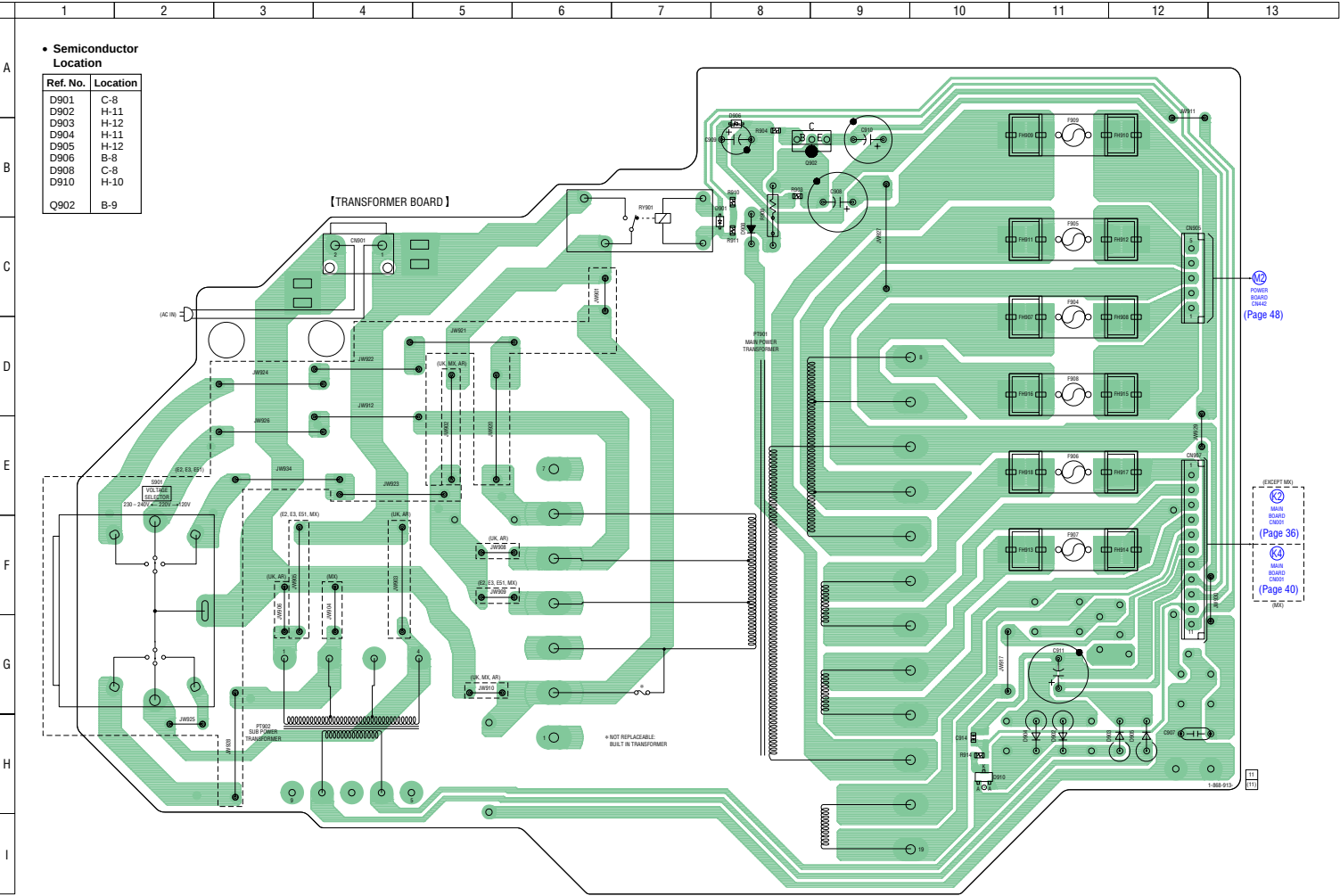


7-35. SCHEMATIC DIAGRAM – TRANSFORMER Board (RG490) –

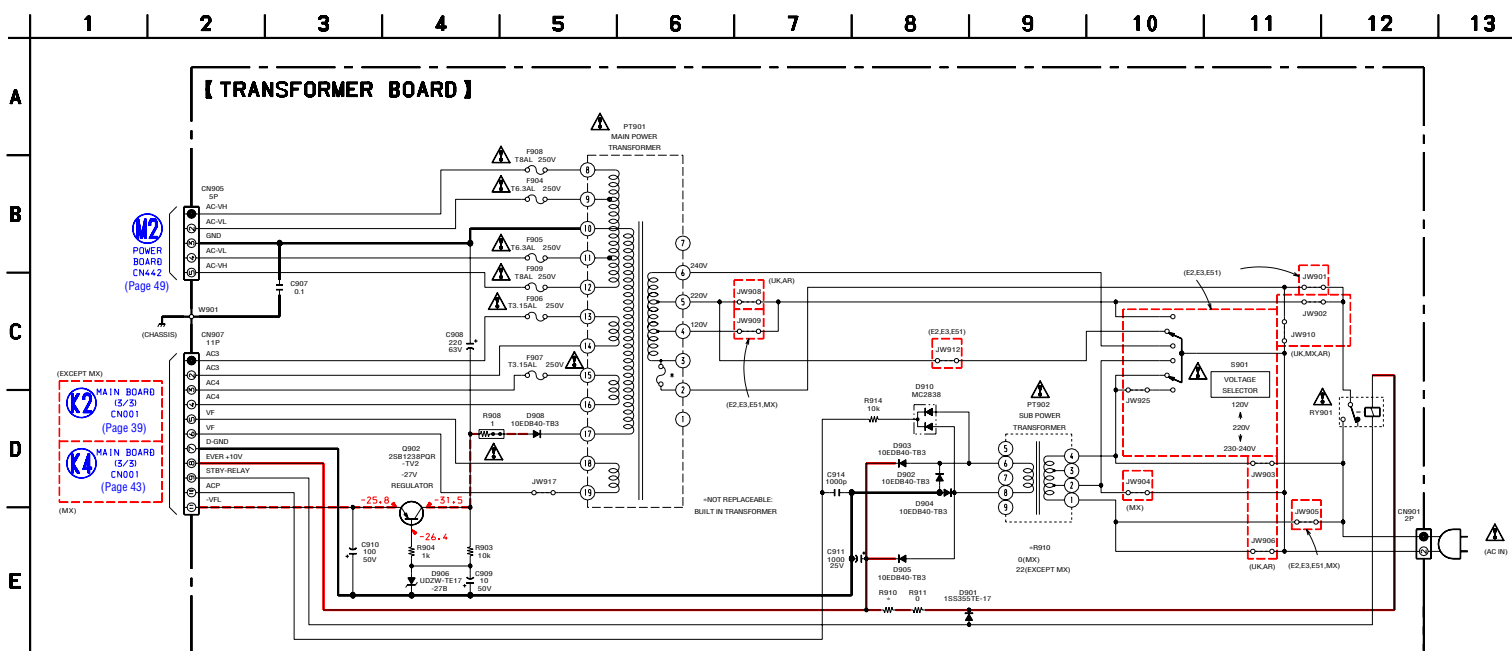


HCD-RG490/RG590

7-36. PRINTED WIRING BOARD –TRANSFORMER Board (RG590) – • See page 27 for Circuit Boards Location.  : Uses unleaded solder.



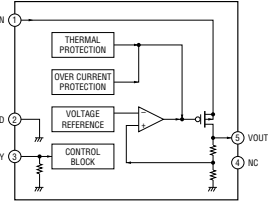
HCD-RG490/RG590



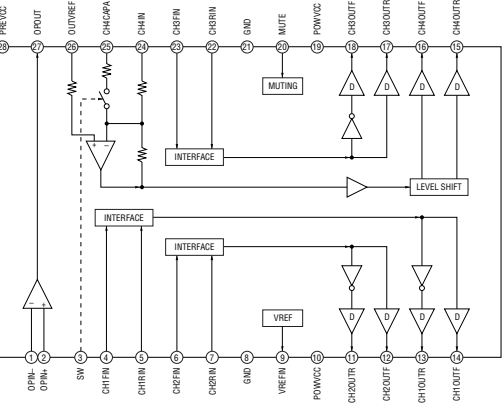
HCD-RG490/RG590

- IC Block Diagrams
- CD Board -

IC203 BH18LB1WG-TR

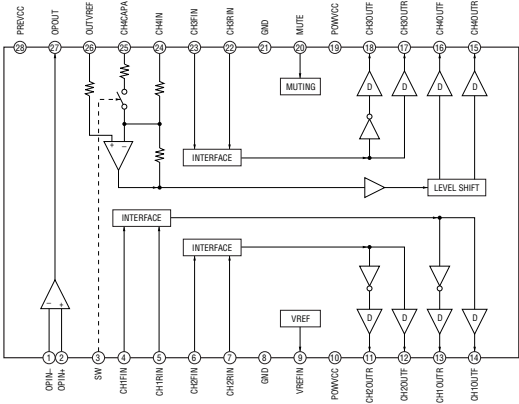


IC402 BA5947FM-E2

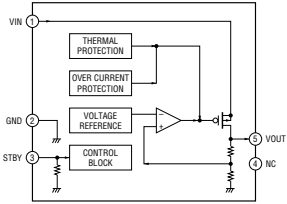


- BD Board -

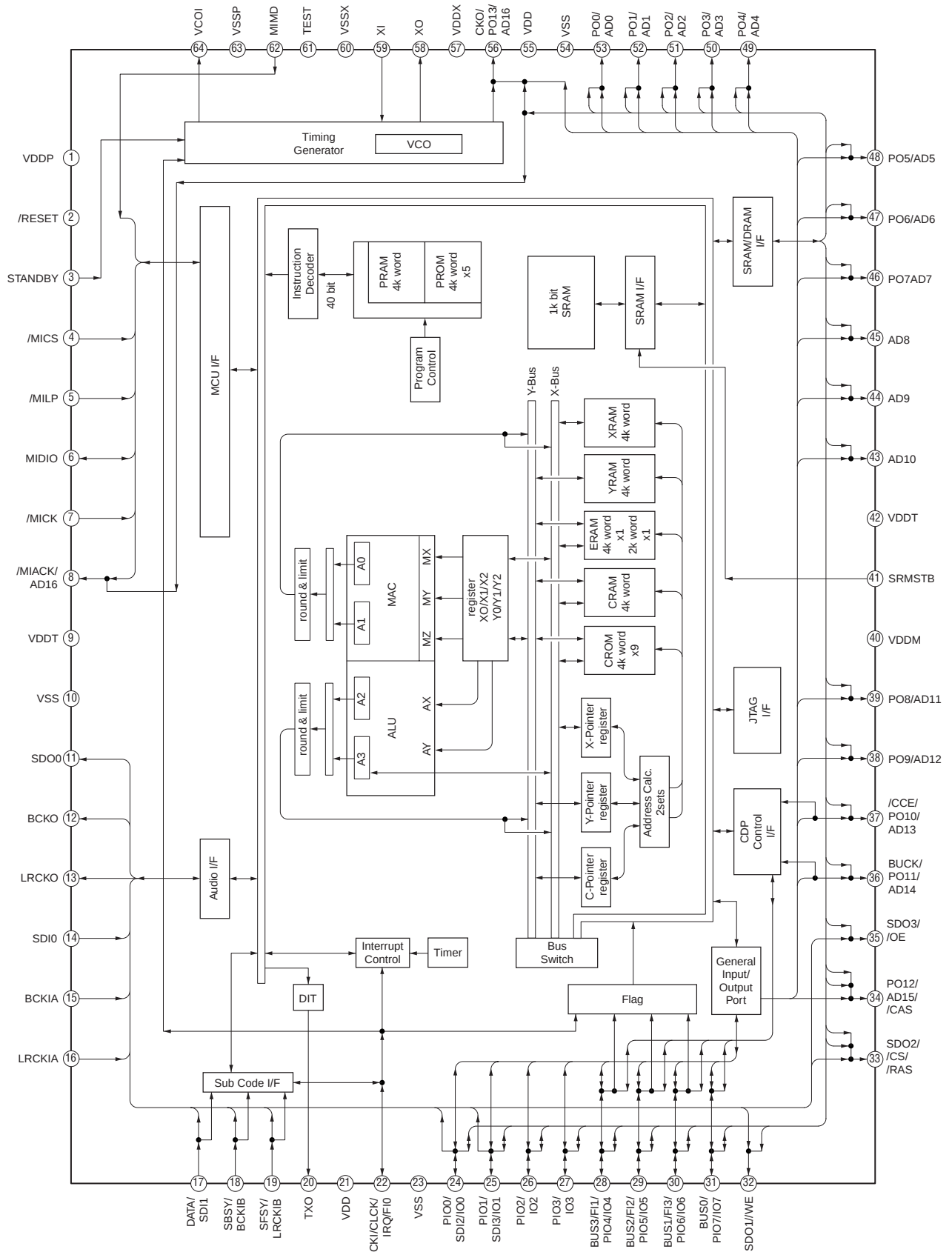
IC251 BA5947FM-E2



IC303 BH15FB1WG



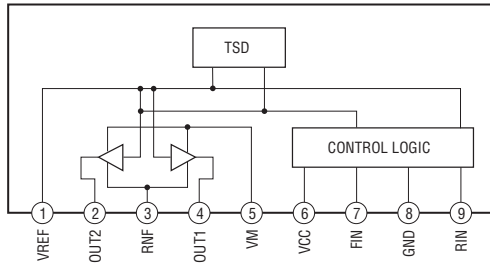
IC301 TC94A34FG-002



HCD-RG490/RG590

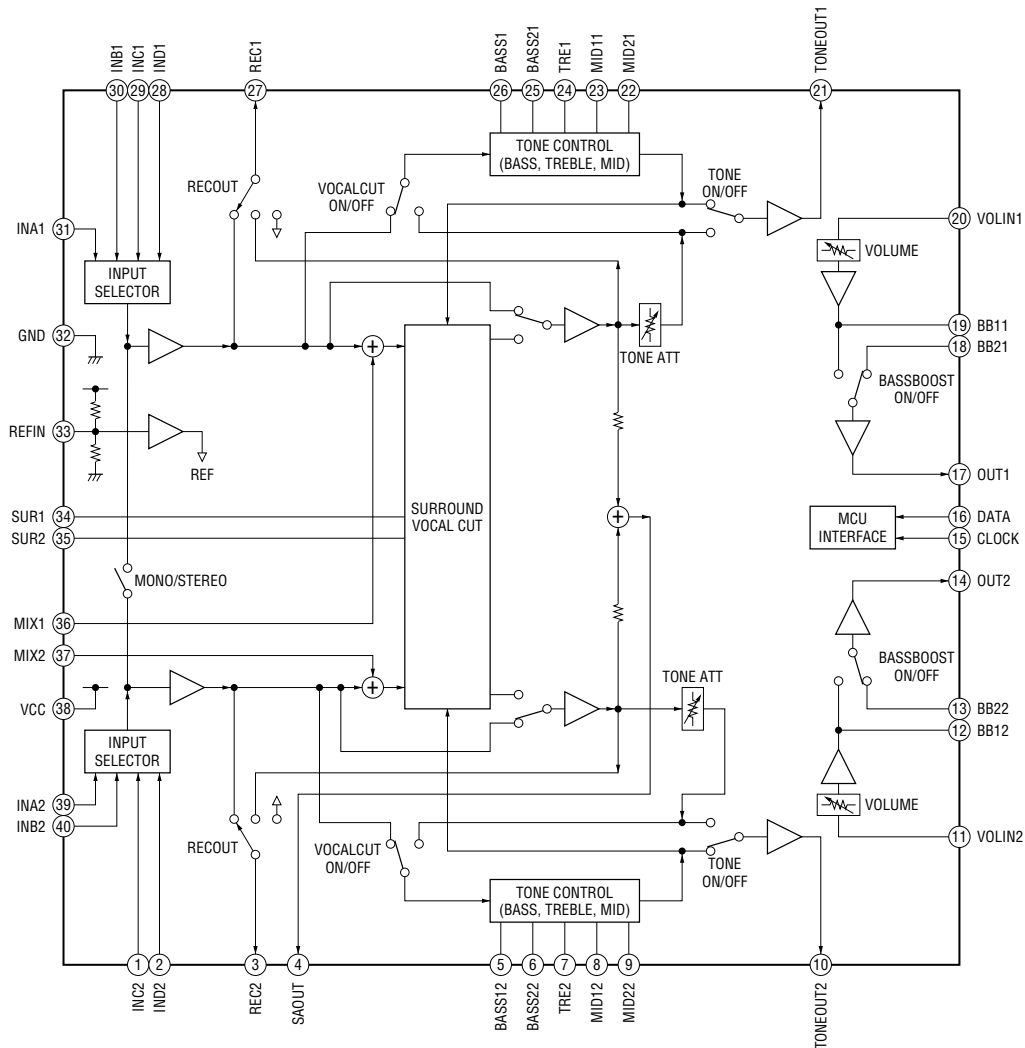
– DRIVER Board –

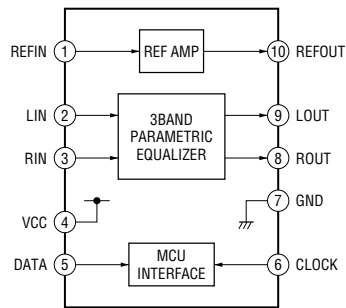
IC701, 712 BA6956AN



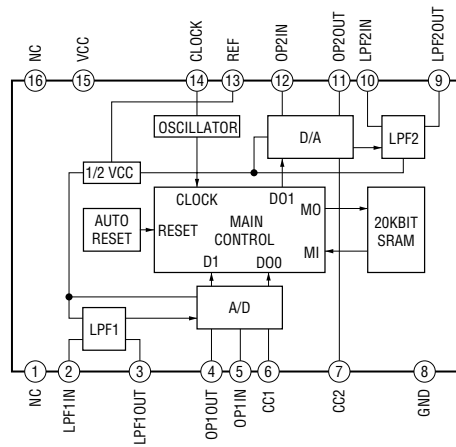
– MAIN Board –

IC101 R2S15207FP

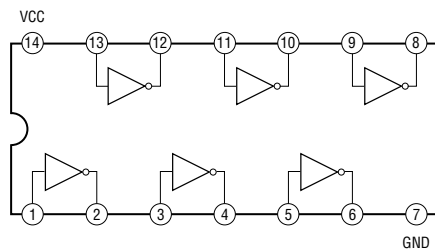
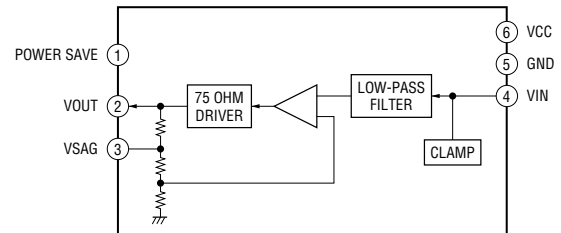


IC102 R2S15208SP

– MIC, AUX, HP Board –

IC802 M65850FP-E1

– CD-G Board –

IC1005 SN74AHCT04NSR**IC1006 NJM2561F1-TE2**

• IC Pin Function Description

CD BOARD IC201 CXD3014A-201R (CD DSP)

Pin No.	Pin Name	I/O	Description
1	LRCK	O	L/R sampling clock signal output terminal
2	LRCKI	I	L/R sampling clock signal input terminal
3	PCMD	O	Serial data output terminal
4	PCMDI	I	Serial data input terminal
5	BCK	O	Bit clock signal output terminal
6	BCKI	I	Bit clock signal input terminal
7	XTACN	I	Oscillation circuit on/off control signal input from the system controller "L": oscillation stop, "H": self-oscillation
8	XRST	I	System reset signal input from the system controller "L": reset
9	VSS	-	Ground terminal
10	IREQ-MP3	O	MP3 data request signal output to the system controller
11	CLOCK	I	CD serial data transfer clock signal input from the system controller
12	DATA2	I	MP3 serial data input from the system controller
13	XLAT-MP3	I	MP3 serial data latch pulse signal input from the system controller
14	REQ-MP3	I	MP3 data request signal input from the system controller
15	ACK-MP3	O	MP3 acknowledge signal output to the system controller
16	XLAT	I	CD serial data latch pulse signal input from the system controller
17	VDD	-	Power supply terminal (+1.8V)
18	SVSS	-	Ground terminal
19	SVDD	-	Power supply terminal (+1.8V)
20	SENS	O	Internal status (SENSE) signal output to the system controller
21	WFCK	O	Write frame clock signal output terminal Not used
22	XUGF	O	XUGF signal output terminal Not used
23	XPCK	O	XPCK signal output terminal Not used
24	GFS	O	Guard frame sync signal output terminal Not used
25	C2PO	O	C2 pointer signal output terminal Not used
26	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller
27	VDD	-	Power supply terminal (+1.8V)
28	COUT	O	Numbers of track counted signal output terminal Not used
29	SVSS	-	Ground terminal
30	SVDD	-	Power supply terminal (+1.8V)
31	MIRR	O	Mirror signal output terminal Not used
32	DFCT	O	Defect signal output terminal Not used
33	FOK	O	Focus OK signal output terminal Not used
34	VSS	-	Ground terminal
35	VDD	-	Power supply terminal (+1.8V)
36	VSS	-	Ground terminal
37	LOCK	O	GFS is sampled by 460 Hz "H" output when GFS is "H" Not used
38	MDP	O	Spindle motor servo control signal output terminal
39	SSTP	I	Disc inner position detection signal input terminal
40	IOVSS1	-	Ground terminal
41	SFDR	O	Sled servo drive signal (+) output terminal
42	SRDR	O	Sled servo drive signal (-) output terminal
43	TFDR	O	Tracking servo drive signal (+) output terminal
44	TRDR	O	Tracking servo drive signal (-) output terminal
45	FFDR	O	Focus servo drive signal (+) output terminal

Pin No.	Pin Name	I/O	Description
46	FRDR	O	Focus servo drive signal (-) output terminal
47	IOVDD1	-	Power supply terminal (+3.3V)
48	AVDD0	-	Power supply terminal (+3.3V)
49	AVSS0	-	Ground terminal
50	E	I	E signal input from the optical pick-up block
51	F	I	F signal input from the optical pick-up block
52	TEI	I	Tracking error signal input terminal
53	TEO	O	Tracking error signal output terminal
54	FEI	I	Focus error signal input terminal
55	FEO	O	Focus error signal output terminal
56	VC	O	Middle point voltage output terminal
57	A	I	A signal input from the optical pick-up block
58	B	I	B signal input from the optical pick-up block
59	C	I	C signal input from the optical pick-up block
60	D	I	D signal input from the optical pick-up block
61	AVDD4	-	Power supply terminal (+3.3V)
62	RFDCO	O	RFDC signal output terminal Not used
63	PDSSENS	I	Reference voltage input terminal for PD
64	AC_SUM	O	RFAC summing amplifier signal output terminal
65	EQ_IN	I	RF equalizer circuit input terminal
66	LD	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
67	PD	I	Light amount monitor input from the laser diode of optical pick-up block
68	RFC	I	Equalizer cut off frequency adjustment terminal
69	AVSS4	-	Ground terminal
70	RFACO	O	EFM signal output terminal
71	RFACI	I	EFM signal input terminal
72	AVDD3	-	Power supply terminal (+3.3V)
73	BIAS	I	Asymmetry circuit constant current input terminal
74	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
75	ASYO	O	Playback EFM full-swing output terminal
76	VPCO	O	Charge pump output terminal for broad-band EFM PLL
77	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
78	AVSS3	-	Ground terminal
79	CLTV	I	VCO1 control voltage input terminal for multiplier
80	FILO	O	Filter output terminal for master PLL
81	FILI	I	Filter input terminal for master PLL
82	PCO	O	Charge pump output terminal for master PLL
83	SVSS	-	Ground terminal
84	SVDD	-	Power supply terminal (+1.8V)
85	SSTB-MP3	I	MP3 standby on/off control signal input terminal "L": standby Not used
86	VDD	-	Power supply terminal (+1.8V)
87	VSS	-	Ground terminal
88	TEST1	I	Input terminal for the test Normally: fixed at "L"
89	DATA	I	CD serial data input from the system controller
90	CLK2	I	MP3 serial data transfer clock signal input from the system controller
91	SVSS	-	Ground terminal

Pin No.	Pin Name	I/O	Description
92	SVDD	-	Power supply terminal (+2.5V)
93	JTAGTCK	I	Clock signal input terminal (for JTAG) Not used
94	JTAGTDI	I	Data input terminal (for JTAG) Not used
95	JTAGTDO	O	Data output terminal (for JTAG) Not used
96	JTAGTMS	I	Mode select signal input terminal (for JTAG) Not used
97	TRST	I	Reset signal input terminal (for JTAG) Not used
98	VSS	-	Ground terminal
99	VDD	-	Power supply terminal (+1.8V)
100	IOVDD2	-	Power supply terminal (+3.3V)
101	DOUT	O	Digital audio signal output terminal Not used
102	TEST	I	Input terminal for the test Normally: fixed at "L"
103	TES1	I	Input terminal for the test Normally: fixed at "L"
104	IOVSS2	-	Ground terminal
105	PLLVD	-	Power supply terminal (+1.8V)
106	PLLVSS	-	Ground terminal
107	XVSS	-	Ground terminal
108	XTAO	O	System clock output terminal (16.9344 MHz)
109	XTAI	I	System clock input terminal (16.9344 MHz)
110	XVDD	-	Power supply terminal (+1.8V)
111	AVDD1	-	Power supply terminal (+3.3V)
112	AOUT1	O	L-ch analog audio signal output terminal
113	VREFL	O	L-ch reference voltage output terminal
114	AVSS1	-	Ground terminal
115	AVSS2	-	Ground terminal
116	VREFR	O	R-ch reference voltage output terminal
117	AOUT2	O	R-ch analog audio signal output terminal
118	AVDD2	-	Power supply terminal (+3.3V)
119	IOVDD0	-	Power supply terminal (+3.3V)
120	IOVSS0	-	Ground terminal

BD BOARD IC101 CXD3059AR (CD DSP)

Pin No.	Pin Name	I/O	Description
1	MIRR	O	Mirror signal output terminal Not used
2	DFCT	O	Defect signal output terminal Not used
3	FOK	O	Focus OK signal output terminal Not used
4	VSS	-	Ground terminal
5	LOCK	O	GFS is sampled by 460 Hz "H" output when GFS is "H" Not used
6	MDP	O	Spindle motor servo control signal output terminal
7	SSTP	I	Disc inner position detection signal input terminal
8	IOVSS0	-	Ground terminal
9	SFDR	O	Sled servo drive signal (+) output terminal
10	SRDR	O	Sled servo drive signal (-) output terminal
11	TFDR	O	Tracking servo drive signal (+) output terminal
12	TRDR	O	Tracking servo drive signal (-) output terminal
13	FFDR	O	Focus servo drive signal (+) output terminal
14	FRDR	O	Focus servo drive signal (-) output terminal
15	IOVDD1	-	Power supply terminal (+3.3V)
16	AVDD0	-	Power supply terminal (+3.3V)
17	AVSS0	-	Ground terminal
18	NC	-	Not used
19	E	I	E signal input from the optical pick-up block
20	F	I	F signal input from the optical pick-up block
21	TEI	I	Tracking error signal input terminal
22	TEO	O	Tracking error signal output terminal
23	FEI	I	Focus error signal input terminal
24	FEO	O	Focus error signal output terminal
25	VC	O	Middle point voltage output terminal
26	A	I	A signal input from the optical pick-up block
27	B	I	B signal input from the optical pick-up block
28	C	I	C signal input from the optical pick-up block
29	D	I	D signal input from the optical pick-up block
30	NC	-	Not used
31	AVDD4	-	Power supply terminal (+3.3V)
32	RFDCO	O	RFDC signal output terminal Not used
33	PDSSENS	I	Reference voltage input terminal for PD
34	AC_SUM	O	RFAC summing amplifier signal output terminal
35	EQ_IN	I	RF equalizer circuit input terminal
36	LD	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
37	PD	I	Light amount monitor input from the laser diode of optical pick-up block
38	NC	-	Not used
39	RFC	I	Equalizer cut off frequency adjustment terminal
40	AVSS4	-	Ground terminal
41	RFACO	O	EFM signal output terminal
42	RFACI	I	EFM signal input terminal
43	AVDD3	-	Power supply terminal (+3.3V)
44	BIAS	I	Asymmetry circuit constant current input terminal
45	ASYI	I	Playback EFM asymmetry comparator voltage input terminal

Pin No.	Pin Name	I/O	Description
46	ASYO	O	Playback EFM full-swing output terminal
47	VPCO	O	Charge pump output terminal for broad-band EFM PLL
48	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
49	AVSS3	-	Ground terminal
50	CLTV	I	VCO1 control voltage input terminal for multiplier
51	FILO	O	Filter output terminal for master PLL
52	FILI	I	Filter input terminal for master PLL
53	PCO	O	Charge pump output terminal for master PLL
54	AVDD5	-	Power supply terminal (+3.3V)
55	DDVROUT	O	DC/DC converter output terminal
56	DDVRSEN	O	DC/DC converter output voltage monitor input terminal
57	AVSS5	-	Ground terminal
58	DDCR	I	Input terminal for the test Normally: fixed at "L"
59	NC	-	B signal input from the optical pick-up block
60	BCKI	I	Bit clock signal input terminal
61	PCMDI	I	Serial data input from the MP3 decoder
62	LRCKI	I	L/R sampling clock signal input terminal
63	LRCK	O	L/R sampling clock signal output terminal
64	VSS	-	Ground terminal
65	PCMD	O	Serial data output to the MP3 decoder
66	BCK	O	Bit clock signal output terminal
67	VDD	-	Power supply terminal (+3.3V)
68	EMPH	O	"L" is output when playback disc is emphasis off "H" is output when playback disc is emphasis on Not used
69	EMPHI	O	"L" is input when de-emphasis is off "H" is output when de-emphasis is on Not used
70	IOVDD2	-	Power supply terminal (+3.3V)
71	DOUT	O	Digital audio signal output terminal Not used
72	TEST	I	Input terminal for the test Normally: fixed at "L"
73	TEST1	I	Input terminal for the test Normally: fixed at "L"
74	IOVSS2	-	Ground terminal
75	NC	-	Not used
76	XVSS	-	Ground terminal
77	XTAO	O	System clock output terminal (16.9344 MHz)
78	XTAI	I	System clock input terminal (16.9344 MHz)
79	XVDD	-	Power supply terminal (+1.8V)
80	AVDD1	-	Power supply terminal (+3.3V)
81	AOUT1	O	L-ch analog audio signal output terminal
82	VREFL	O	L-ch reference voltage output terminal
83	AVSS1	-	Ground terminal
84	AVSS2	-	Ground terminal
85	VREFR	O	R-ch reference voltage output terminal
86	AOUT2	O	R-ch analog audio signal output terminal
87	AVDD2	-	Power supply terminal (+3.3V)
88	NC	-	B signal input from the optical pick-up block
89	IOVDD0	-	Power supply terminal (+3.3V)
90	RMUT	O	Muting control signal (for R-ch) output terminal Not used
91	LMUT	O	Muting control signal (for L-ch) output terminal Not used
92	NC	-	B signal input from the optical pick-up block

Pin No.	Pin Name	I/O	Description
93	XTSL	I	Input terminal for the system clock frequency setting "L": 16.9344 MHz, "H": 33.8688MHz Fixed at "L" in this set
94	IOVSS0	-	Ground terminal
95	XTACN	I	Oscillation circuit on/off control signal input from the system controller "L": oscillation stop, "H": self-oscillation
96	SQSO	O	Subcode Q data output terminal Not used
97	SQCK	I	Subcode Q data reading clock signal input terminal Not used
98	SBSO	O	Subcode serial data output to the CD graphic decoder
99	EXCK	I	Subcode serial data reading clock signal input from the CD graphic decoder
100	XRST	I	System reset signal input from the system controller "L": reset
101	SYSM	I	System muting on/off control signal input terminal "H": muting on Fixed at "L" in this set
102	DATA	O	CD serial data input from the system controller
103	VSS	-	Ground terminal
104	XLAT	I	CD serial data latch pulse signal input from the system controller
105	CLOCK	I	CD serial data transfer clock signal input from the system controller
106	VDD	-	Power supply terminal (+3.3V)
107	SENS	O	Internal status (SENSE) signal output to the system controller
108	SCLK	I	SENSE serial data reading clock signal input terminal Not used
109	ATSK	O	Output terminal for anti-shock Not used
110	WFCK	O	Write frame clock signal output to the CD graphic decoder
111	XUGF	O	XUGF signal output terminal Not used
112	XPCK	O	XPCK signal output terminal Not used
113	GFS	O	Guard frame sync signal output terminal Not used
114	C2PO	O	C2 pointer signal output terminal Not used
115	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller and CD graphic decoder
116	VDD	-	Power supply terminal (+3.3V)
117	C4M	O	4.2336 MHz clock signal output terminal Not used
118	WDCK	O	Guard subcode sync (S0+S1) detection signal output terminal Not used
119	COUT	O	Numbers of track counted signal output to terminal Not used
120	NC	-	Not used

MAIN BOARD IC901 uPD78F0547GC (S)-UBT-A (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	I-AC-PULSE	I	AC power detection signal input terminal
2	O-REC/PB	O	Recording/playback selection signal output terminal "L": playback, "H": recording
3	O-REC-MUTE	O	Recording muting on/off control signal output terminal "L": muting on
4	O-BIAS	O	Recording bias on/off control signal output terminal "H": bias on
5	O-STK-MUTE	O	Standby signal output to the power amplifier (for front speaker)
6	O-SW_GAIN	O	Sub woofer gain control signal output terminal Not used
7	O-POWER-RELAY	O	Power on/off relay drive signal output terminal "H": power on
8	O-XM-POWER3.3	O	Power on/off control signal output terminal for XM section Not used
9	I-AC-CUT	I	AC power off detection signal input terminal
10	I-XRESET	I	System reset signal input from the reset signal generator "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
11	XT2 (32.768KHZ)	O	Sub system clock output terminal (32.768 kHz)
12	XT1 (32.768KHZ)	I	Sub system clock input terminal (32.768 kHz)
13	FLMDO	I	Internal flash memory data writing mode control signal input terminal
14	X2 (16MHZ)	O	Main system clock output terminal (16 MHz)
15	X1 (16MHZ)	I	Main system clock input terminal (16 MHz)
16	REGC	-	External capacitor connection terminal for regulator
17	VSS	-	Ground terminal
18	EVSS	-	Ground terminal
19	VDD	-	Power supply terminal (+3.3V)
20	EVDD	-	Power supply terminal (+3.3V)
21	O-SYS-MUTE	O	Muting on/off control signal output terminal "L": muting on
22	O-SWR	O	Sub woofer speaker on/off relay drive signal output terminal "L": sub woofer speaker on
23	O-FRONT-SP-RELAY	O	Front speaker on/off relay drive signal output terminal "H": front speaker on
24	O-XTCN	O	Oscillation circuit on/off control signal output to the CD DSP "L": oscillation stop, "H": self-oscillation
25	O-MP3-RST	O	System reset signal output to the MP3 decoder "L": reset (RG490: Mexican/RG590: Mexican models)
26	O-MP3-XLAT/ O-MP3-CS	O	MP3 serial data latch pulse signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 chip select signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
27	I-MP3-ACK	I	MP3 acknowledge signal input from the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 acknowledge signal input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
28	O-XLAT/ O-MP3-STB	O	CD serial data latch pulse signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) Standby signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
29	I-MP3-REQ	I	MP3 data request signal input from the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 data request signal input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
30	O-MP3-CS/ O-MP3-LP	O	MP3 data request signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data latch pulse signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)

Pin No.	Pin Name	I/O	Description
31	O-D-MUTE/ O-XLT	O	System reset signal output to the motor/coil driver "L": reset (Except RG490: Mexican/RG590: Mexican models) CD serial data latch pulse signal output to the CD DSP (RG490: Mexican/RG590: Mexican models)
32	O-XRST	O	System reset signal output to the CD DSP "L": reset (Except RG490: Mexican/RG590: Mexican models) System reset signal output to the CD DSP and motor/coil driver "L": reset (RG490: Mexican/RG590: Mexican models)
33	O-LM-R	O	Loading motor control signal output terminal (reverse direction)
34	O-LM-F	O	Loading motor control signal output terminal (forward direction)
35	O-TM-R	O	Table motor control signal output terminal (reverse direction)
36	O-TM-F	O	Table motor control signal output terminal (forward direction)
37	I-CD-NUMBER- SENS	I	Disc table address sensor input terminal
38	I-OPEN-SW	I	Disc table open/close detection switch input terminal "L": open, "H": close
39	I-XTUNED	I	Tuning detection signal input terminal Not used
40	I-SCOR	I	Subcode sync (S0+S1) detection signal input from the CD DSP
41	O-CDG-RST/ I-RDS-CLK	I/O	System reset signal output to the CD graphics decoder "L": reset (RG490: Mexican/RG590: Mexican models) RDS data transfer clock signal input from the tuner (FM/AM) (RG590: UK model)
42	O-LC23003-CE	O	Chip enable signal output to the tuner (FM/AM)
43	O-LC23003-DO	O	Serial data output to the tuner (FM/AM)
44	O-LC23003-CLK	O	Serial data transfer clock signal output to the tuner (FM/AM)
45	I-LC23003-DI	I	Serial data input from the tuner (FM/AM)
46	O-VMUTE	O	Video muting on/off control signal output terminal "H": muting on (RG490: Mexican/RG590: Mexican models)
47	O-CDG -POWER	O	Power on/off control signal output terminal for CD-G section "H": power on (RG490: Mexican/RG590: Mexican models)
48	I-CDG-DET	I	CD-G detection signal input from the CD graphics decoder
49	O-CDG-MUTE- DATA/ I-RDS-DATA	I/O	Muting control signal output to the CD graphics decoder (RG490: Mexican/RG590: Mexican models) RDS data input from the tuner (FM/AM) (RG590: UK model)
50	I-XM-RXD	I	Receive data input terminal Not used
51	O-XM-TXD	O	Transmit data output terminal Not used
52	O-CD-DATA	O	CD serial data output to the CD DSP
53	I-CD-SENS	I	Internal status (SENSE) signal input from the CD DSP
54	O-CD-CLK	O	CD serial data transfer clock signal output to the CD DSP
55	I-MIC-DET	I	Microphone plug insert detection signal input terminal "L": microphone plug insert (Except RG490: 240V AC area in E/RG590: 240V AC area in E and UK models)
56	O-R2S15208SP- DATA	O	Serial data output to the parametric equalizer (Except RG490/RG590: UK models)
57	O-AUDIO-CLK	O	Serial data transfer clock signal output to the electrical volume and parametric equalizer (Except RG490/RG590: UK models) Serial data transfer clock signal output to the electrical volume (RG490/RG590: UK models)
58	O-R2S15207FP- DATA	O	Serial data output to the electrical volume
59	AVREF	I	Reference voltage (+3.3V) input terminal
60	AVSS	-	Ground terminal
61	I-HP/AUDIO IN	I	Headphone plug and audio in plug insert detection signal input terminal "L": headphone plug or audio in plug insert

Pin No.	Pin Name	I/O	Description
62	I-SUFFIX	I	Setting terminal for the model and destination
63	I-VACS	I	VACS signal input terminal (A/D input)
64	I-PROTECTOR	I	Protector detection signal input terminal
65	I-KEY0	I	Front panel key input terminal (A/D input)
66	I-CD-ENCODER	I	Disc table address sensor (rotary encoder) input terminal
67	I-MODEL	I	Setting terminal for the model and destination
68	I-STREAM	I	Audio signal input for stream LED (A/D input)
69	O-STBY-LED	O	LED drive signal output terminal for STANDBY indicator "H": LED on
70	O-MP3-CLK	O	MP3 serial data transfer clock signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data transfer clock signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
71	I-MP3-DATA	I	MP3 serial data input terminal (Except RG490: Mexican/RG590: Mexican models) MP3 serial data input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
72	O-MP3-DATA	O	MP3 serial data output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
73	I-TCM-SYNC	I	Sync signal input from the tape mechanism deck controller
74	O-VFD-RESET	O	System reset signal output to the fluorescent indicator tube/LED driver "L": reset
75	O-VFD-CE	O	Chip enable signal output to the fluorescent indicator tube/LED driver
76	O-VFD-DATA	O	Serial data output to the fluorescent indicator tube/LED driver
77	I-VFD-DATA	I	Serial data input from the fluorescent indicator tube/LED driver
78	O-VFD-CLK	O	Serial data transfer clock signal output to the fluorescent indicator tube/LED driver
79	I-WAKEUP	I	Wake up signal input terminal
80	I-XSIRCS-IN	I	SIRCS signal input from the remote control receiver

CD-G BOARD IC1001 TC9411AFG (BS, K) (CD GRAPHICS DECODER)

Pin No.	Pin Name	I/O	Description
1	SESUB	I	Not used
2	CLCK	O	Subcode serial data reading clock signal output to the CD DSP
3	DATA	I	Subcode serial data input from the CD DSP
4	SBSY	I	Subcode sync (S0+S1) detection signal input from the CD DSP
5	SFSY	I	Write frame clock signal input from the CD DSP
6	MUTE	I	Muting control signal input from the system controller
7	VDD1	-	Power supply terminal (+5V)
8	VSS1	-	Ground terminal
9	MCE	I	Chip enable signal input terminal Not used
10	MCDO	O	Serial data output terminal Not used
11	MCDI	I	Serial data input terminal Not used
12	MCCK	I	Serial data transfer clock signal input terminal Not used
13	XWE	O	Write enable signal output to the D-RAM
14	XRAS	O	Row address strobe signal output to the D-RAM
15 to 22	VA0 to VA7	O	Address signal output to the D-RAM
23	VSS2	-	Ground terminal
24	VDD2	-	Power supply terminal (+5V)
25	VD0	I/O	Two-way data bus with the D-RAM
26	XCAS	O	Column address strobe signal output to the D-RAM
27	VD1	I/O	Two-way data bus with the D-RAM
28	XOE	O	Output enable signal output to the D-RAM
29, 30	VD2, VD3	I/O	Two-way data bus with the D-RAM
31	BLANKIN	I	Blanking signal input terminal Not used
32	BIN	I	RGB (B) signal input terminal Not used
33	GIN	I	RGB (G) signal input terminal Not used
34	RIN	I	RGB (R) signal input terminal Not used
35	XHSYNC	O	Horizontal synchronize signal output terminal Not used
36	XVSYNC	O	Vertical synchronize signal output terminal Not used
37	GDET	O	CD-G detection signal output to the system controller
38	VON	I	Video on control signal input terminal Not used
39, 40	TEST1, TEST2	I	Test mode setting terminal
41	LINESW	I	Line switch input terminal Not used
42	VREF	I	Reference voltage input terminal
43	AVDD	-	Power supply terminal (+5V)
44	VDOUT	O	Video signal output terminal
45	AVSS	-	Ground terminal
46, 47	BIAS1, BIAS2	I	Bias setting terminal
48	VSS3	-	Ground terminal
49	VDD3	-	Power supply terminal (+5V)
50	QNG	O	Not used
51	PNG	O	Not used
52	DEN	I	NTSC/PAL selection signal input terminal
53	FSC	O	Not used
54	XRESET	I	System reset signal input from the system controller "L": reset
55	SENTSC	I	Not used
56	PDOWN	I	Power down signal input terminal Not used

Pin No.	Pin Name	I/O	Description
57	XI2	I	System clock input terminal (17.734475 MHz) (for PAL) Not used
58	XO2	O	System clock output terminal (17.734475 MHz) (for PAL) Not used
59	XI1	I	System clock input terminal (14.31818 MHz) (for NTSC)
60	XO1	O	System clock output terminal (14.31818 MHz) (for NTSC)

PANEL BOARD IC701 uPD780232GC-509-8BT-A**(FLUORESCENT INDICATOR TUBE/LED DRIVER, TAPE MECHANISM DECK CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1	VDD1	-	Power supply terminal (+3.3V)
2	VSS1	-	Ground terminal
3	X1	I	System clock input terminal (4.19 MHz)
4	X2	O	System clock output terminal (4.19 MHz)
5	IC	I	Input terminal for the IC test Normally: fixed at "L"
6	XRESET	I	System reset signal input from the system controller "L": reset
7	SCK1	I	Serial data transfer clock signal input from the system controller
8	SI1	I	Serial data input from the system controller
9	SO1	O	Serial data output to the system controller
10	I-VOL A	I	Jog dial pulse input from the rotary encoder (VOLUME) (A phase input)
11	I-VOL B	I	Jog dial pulse input from the rotary encoder (VOLUME) (B phase input)
12	I-JOG A	I	Jog dial pulse input from the rotary encoder (multi jog) (A phase input)
13	I-JOG B	I	Jog dial pulse input from the rotary encoder (multi jog) (B phase input)
14, 15	NC	I	Not used
16	CE	I	Chip select signal input from the system controller
17	I-MODEL	I	Destination setting terminal
18	AVSS	-	Ground terminal
19 to 22	KEY1 to KEY4	I	Front panel key input terminal (A/D input)
23	VSS0	-	Ground terminal
24	AVDD	-	Power supply terminal (+5V)
25	VDD0	-	Power supply terminal (+5V)
26	NC	I	Not used
27	I-HALF-B	I	Deck-B cassette detection signal input from the tape mechanism deck block "L": cassette in
28	I-REEL-B	I	Deck-B tape reel rotating detection signal input from the tape mechanism deck block
29	I-REC-SW	I	Recording-proof detection signal input from the tape mechanism deck block "L": recording possible
30	I-HALF-A	I	Deck-A cassette detection signal input from the tape mechanism deck block "L": cassette in
31	I-REEL-A	I	Deck-A tape reel rotating detection signal input from the tape mechanism deck block
32	NC	I	Not used
33	O-MOTOR	O	Capstan/reel motor drive signal output terminal "H": motor on
34	O-SOL-A	O	Deck-A side trigger plunger drive signal output terminal "H": plunger on
35	O-SOL-B	O	Deck-B side trigger plunger drive signal output terminal "H": plunger on
36	O-TCM-SYNC	O	Sync signal output to the system controller
37	SW LED	O	LED rive signal output of the SUBWOOFER indicator "H": LED on
38	NC	I	Not used
39 to 43	STREAM LED1 to STREAM LED5	O	LED rive signal output of the stream indicator "H": LED on
44	NC	I	Not used
45 to 58	S1 to S14	O	Segment drive signal output to the fluorescent indicator tube
59	VDD2	-	Power supply terminal (+5V)
60	VLOD	-	Power supply terminal (-27V)
61 to 67	S15 to S21	O	Segment drive signal output to the fluorescent indicator tube
68 to 80	G13 to G11	O	Grid drive signal output to the fluorescent indicator tube

SECTION 8
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE (WHITE) . . . (RED)

Parts Color Cabinet's Color

- Abbreviation

AR : Argentina model

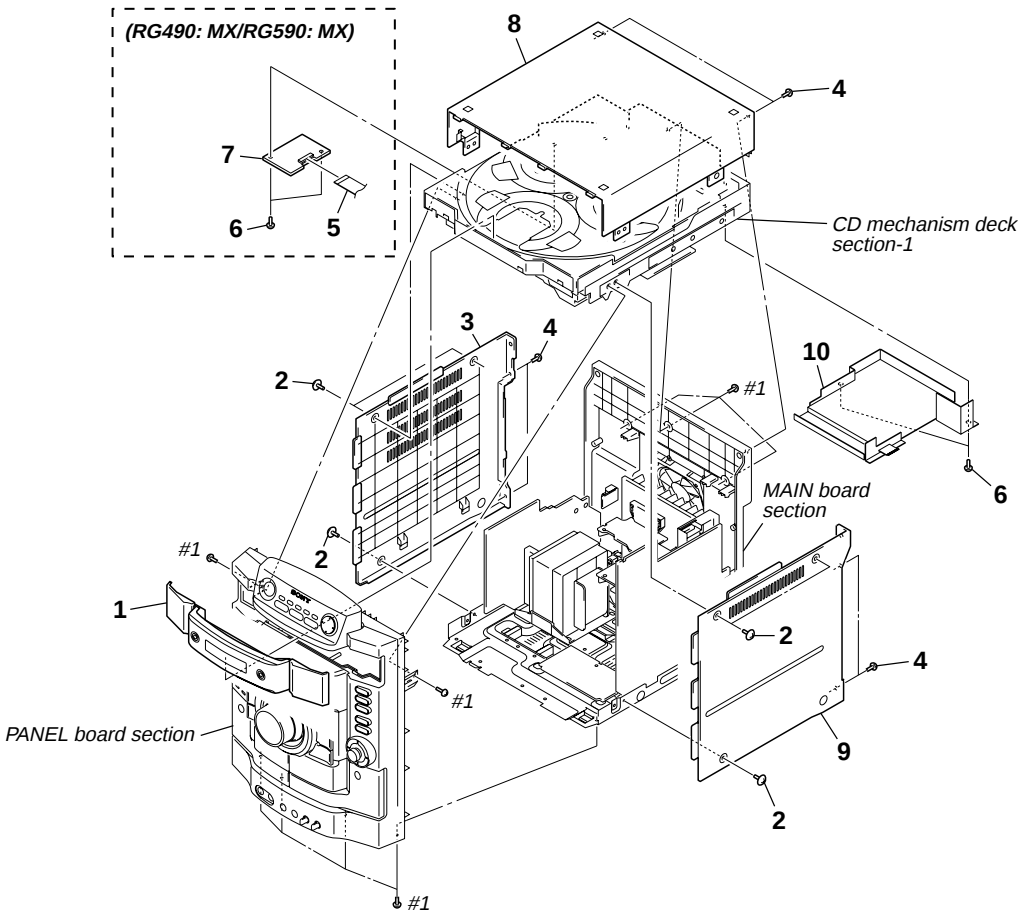
E2 : 120V AC area in E model E51 : Chilean and Peruvian models

E3 : 240V AC area in E model MX : Mexican model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

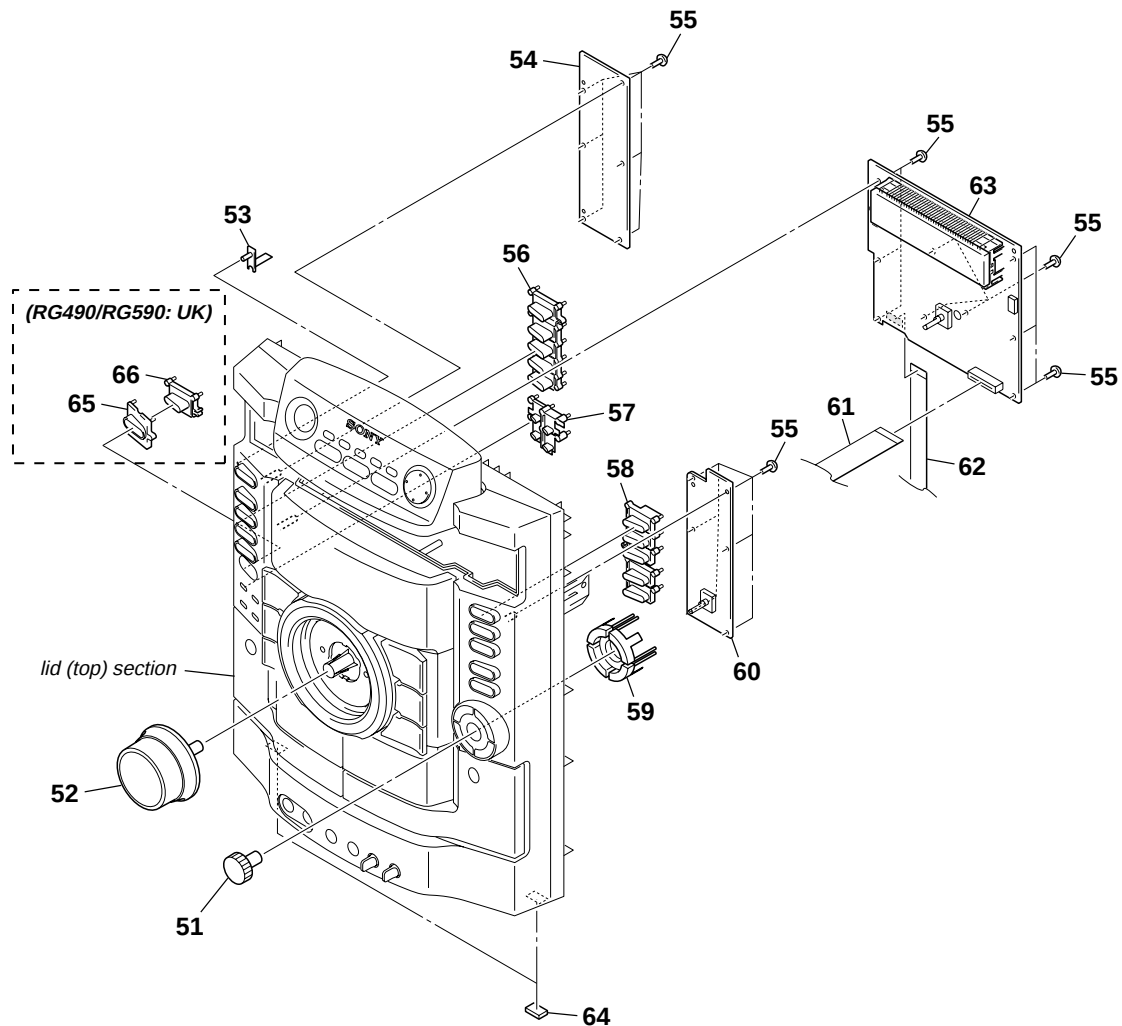
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

8-1. CASE SECTION



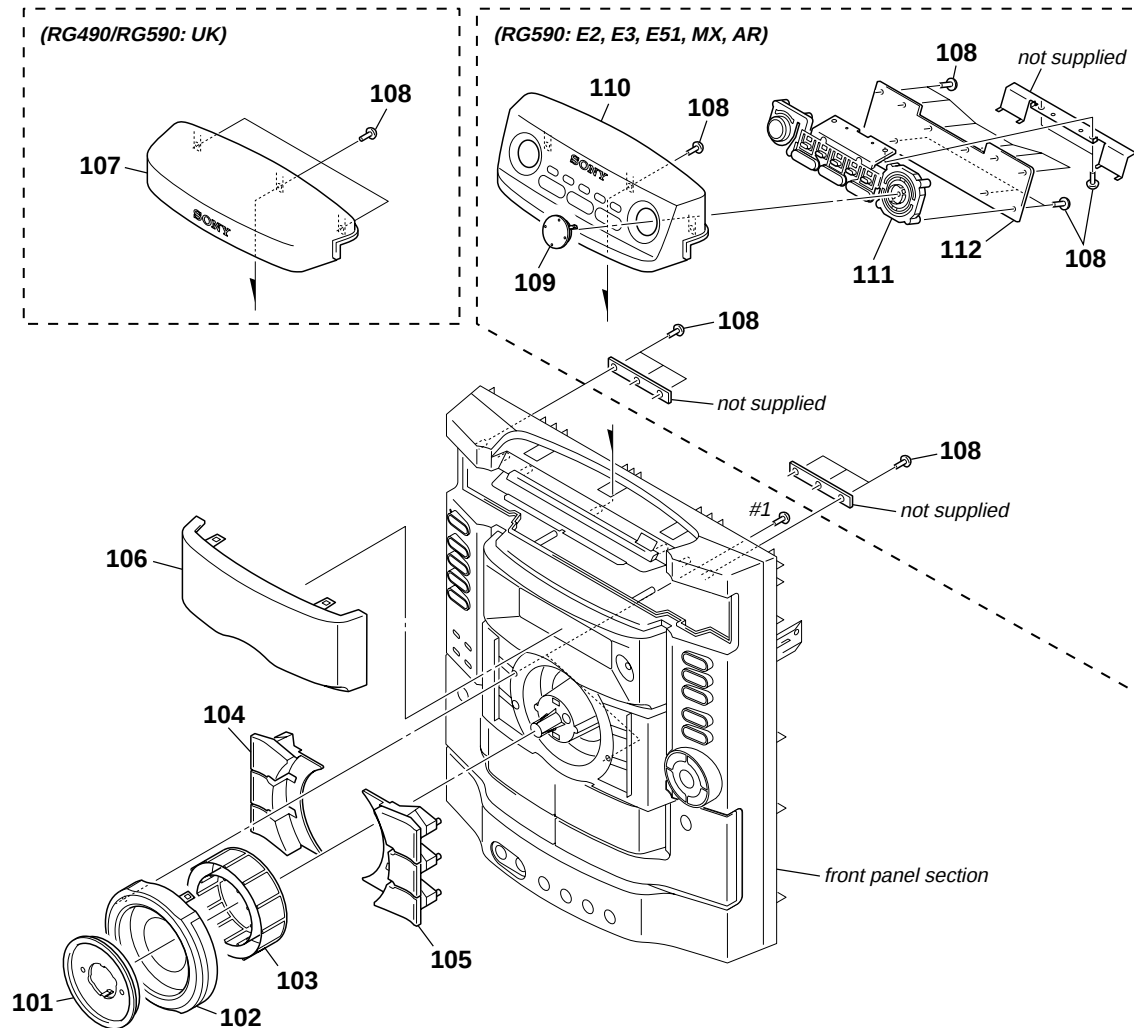
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	2-658-299-01	LID (CD) (RG590: E2, E51, AR)		6	4-951-620-01	SCREW (2.6X8), +BVTP	
1	2-658-299-11	LID (CD) (RG590: E3)		7	A-1159-964-A	CD-G BOARD, COMPLETE	(RG490: MX/RG590: MX)
1	2-658-299-21	LID (CD) (RG490: E2, E51)		8	2-599-854-11	CASE (TOP)	
1	2-658-299-31	LID (CD) (RG490: E3/RG590: UK)		9	2-599-856-11	CASE (SIDE-R)	
1	2-658-299-41	LID (CD) (RG490: MX)		10	2-675-793-01	COVER (OP)	
1	2-658-299-51	LID (CD) (RG590: MX)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
2	3-363-099-32	SCREW (CASE 3 TP2)					
3	2-599-855-11	CASE (SIDE-L)					
4	3-254-143-11	SCREW (B3), (+) BV TAPPING					
5	1-828-975-21	WIRE (FLAT TYPE) (13 CORE)	(RG490: MX/RG590: MX)				

8-2. PANEL BOARD SECTION



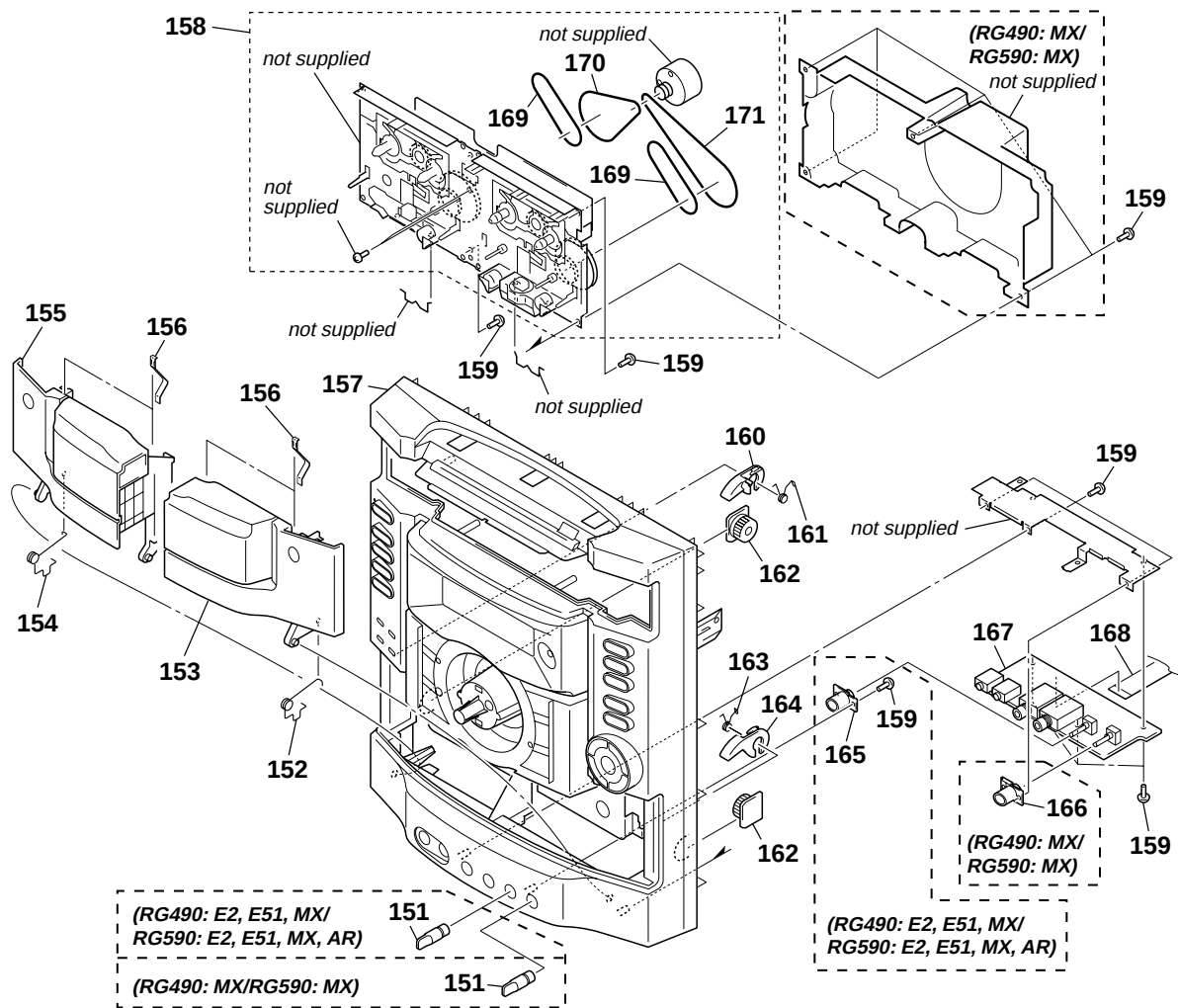
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	2-658-294-01	KNOB (JOG) (RG590: E2, E3, E51, MX, AR)		59	2-658-281-11	KEY (JOG) (REPEAT, ENTER, SLEEP, PLAY MODE/TUNING MODE) (RG590: E2, E3, E51, MX, AR)	
51	2-658-294-11	KNOB (JOG) (RG490/RG590: UK)		60	A-1159-681-A	KEY RIGHT BOARD, COMPLETE (EXCEPT RG490: MX/RG590: MX)	
52	2-658-292-01	KNOB (VOL A)		60	A-1159-682-A	KEY RIGHT BOARD, COMPLETE (RG490: MX/RG590: MX)	
53	2-658-279-01	INDICATOR (POWER)		61	1-831-952-21	CABLE, FLEXIBLE FLAT (19 CORE)	
54	A-1159-677-A	KEY LEFT BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)		62	1-831-779-21	CABLE, FLEXIBLE FLAT (11 CORE)	
54	A-1159-678-A	KEY LEFT BOARD, COMPLETE (RG590: E2, E3, E51, AR)		63	A-1159-666-A	PANEL BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)	
54	A-1159-679-A	KEY LEFT BOARD, COMPLETE (RG590: MX)		63	A-1159-667-A	PANEL BOARD, COMPLETE (RG590: E2, E3, E51, AR)	
54	A-1163-183-A	KEY LEFT BOARD, COMPLETE (RG490: MX)		63	A-1159-668-A	PANEL BOARD, COMPLETE (RG590: MX)	
55	4-951-620-01	SCREW (2.6X8), +BVTP		63	A-1163-174-A	PANEL BOARD, COMPLETE (RG490: MX)	
56	2-658-275-01	KEY (POWER) (I/⏻, CD, TUNER/BAND, TAPE A/B, AUDIO IN)		64	4-225-252-01	CUSHION (FOOT)	
57	2-658-274-01	KEY (REC)		65	2-658-277-01	RING (SUB WOOFER) (RG490/RG590: UK)	
58	2-658-276-01	KEY (CD) (DISC 1, DISC 2, DISC 3, DISC SKIP/EX-CHANGE, ⏮)		66	2-658-278-01	KEY (SUB WOOFER) (RG490/RG590: UK)	
59	2-658-281-01	KEY (JOG) (GROOVE, SURROUND, ENTER, EQ BAND) (RG490/RG590: UK)					

8-3. LID (TOP) SECTION



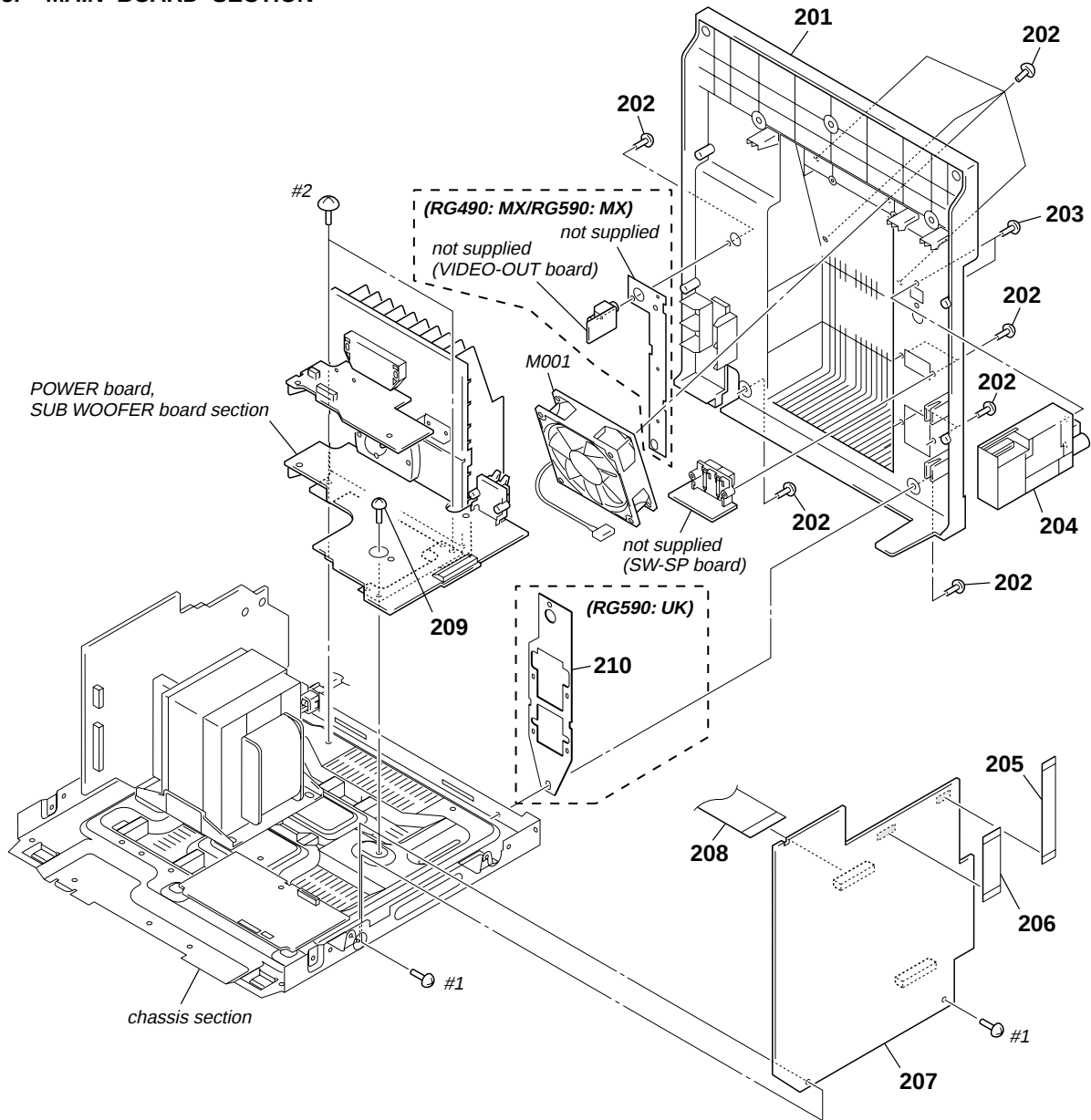
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	2-658-285-01	REFLECTOR (VOL)		108	4-951-620-01	SCREW (2.6X8), +BVTP	
102	X-2109-226-1	RING (VOL) ASSY (SERVICE)		109	2-658-302-01	KEY (SELECT) (+   -)	
		(RG590: E2, E3, E51, MX, AR)				(RG590: E2, E3, E51, MX, AR)	
102	X-2109-227-1	RING (VOL) ASSY (SERVICE)		110	X-2109-228-1	LID (TOP A) ASSY (SERVICE)	
		(RG490/RG590: UK)				(RG590: E2, E3, E51, MX, AR)	
103	2-658-284-01	GUIDE (VOL LED)		111	X-2109-231-1	KEY (P-EQ) ASSY (SERVICE)	
104	2-658-286-01	KEY (CENTER L)				(PRESET EQ, BASS, VOCAL, GUITAR)	
		( ,  ,  TUNING -,   -)				(RG590: E2, E3, E51, MX, AR)	
105	2-658-287-01	KEY (CENTER R)		112	A-1159-684-A	KEY TOP BOARD, COMPLETE	
		( ,  ,  TUNING +,   +)				(RG590: E2, E3, E51, AR)	
106	2-658-283-71	WINDOW (DISPLAY) (RG490)		112	A-1159-685-A	KEY TOP BOARD, COMPLETE (RG590: MX)	
106	2-658-283-81	WINDOW (DISPLAY) (RG590: UK)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
106	2-658-283-91	WINDOW (DISPLAY)					
		(RG590: E2, E3, E51, MX, AR)					
107	X-2109-229-1	LID (TOP B) ASSY (SERVICE)					
		(RG490/RG590: UK)					

8-4. FRONT PANEL SECTION



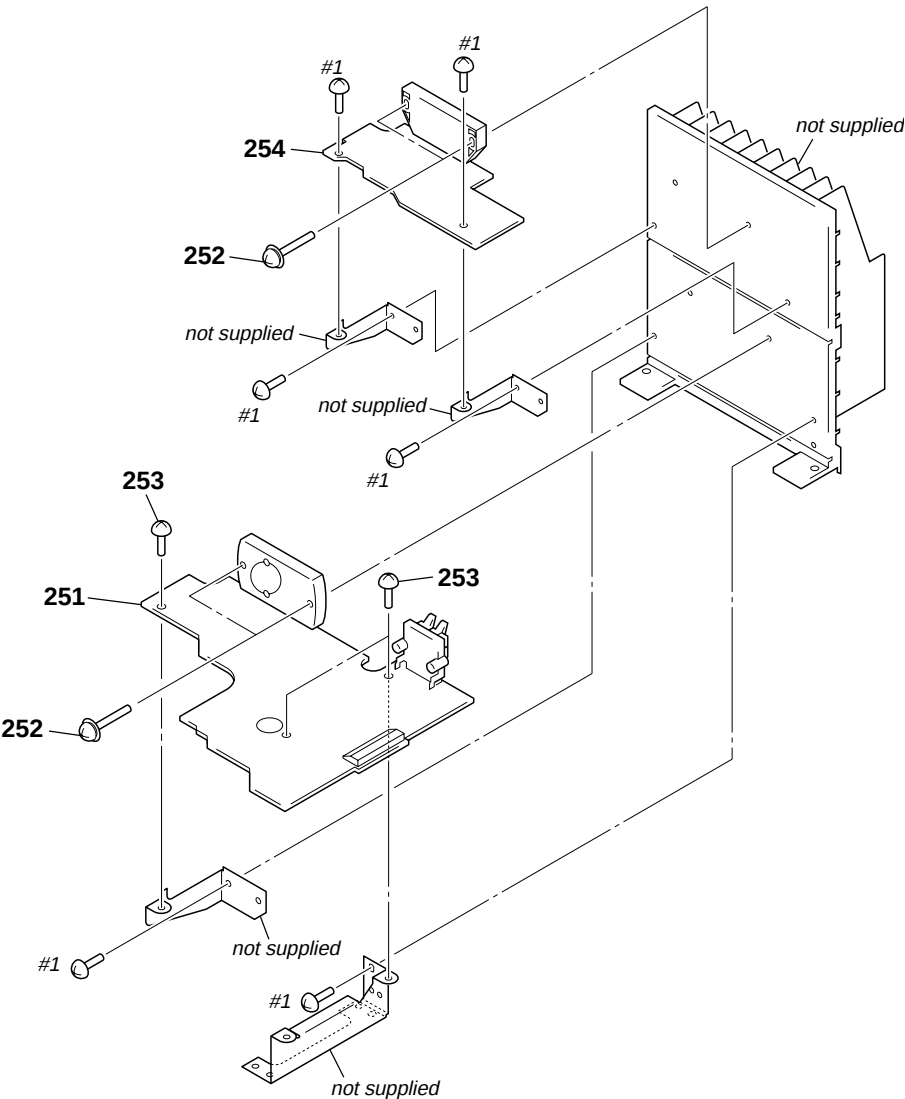
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	2-638-220-01	KNOB (MIC) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)		161	4-231-841-01	SPRING (HEART CAM-B)	
152	2-658-304-01	SPRING (CASS R)		162	4-224-104-41	DAMPER	
153	2-658-271-01	BOX, CASSETTE (R)		163	4-231-836-01	SPRING (HEART CAM-A)	
154	2-658-303-01	SPRING (CASS L)		164	4-231-824-01	CAM (A), HEART	
155	2-658-270-01	BOX, CASSETTE (L) (RG490: E2, E51, MX/ RG590: E2, E51, MX, AR)		165	2-658-272-01	HOLDER (MIC 1) (RG490: E2, E51, MX/ RG590: E2, E51, MX, AR)	
155	2-658-270-11	BOX, CASSETTE (L) (RG490: E3/RG590: UK, E3)		166	2-658-273-01	HOLDER (MIC 2) (RG490: MX/RG590: MX)	
156	4-238-631-11	TAPE SPRING		167	A-1159-739-A	MIC. AUX. HP BOARD, COMPLETE (RG490: E3/RG590: UK, E3)	
157	X-2109-217-1	PANEL (SERVICE) ASSY, FRONT (RG490: E3/RG590: UK)		167	A-1159-740-A	MIC. AUX. HP BOARD, COMPLETE (RG490: E2, E51/RG590: E2, E51, AR)	
157	X-2109-218-1	PANEL (SERVICE) ASSY, FRONT (RG490: E2, E51)		167	A-1159-741-A	MIC. AUX. HP BOARD, COMPLETE (RG490: MX/RG590: MX)	
157	X-2109-219-1	PANEL (SERVICE) ASSY, FRONT (RG490: MX)		168	1-831-772-21	CABLE, FLEXIBLE FLAT (9 CORE) (RG490: E3/RG590: UK, E3)	
157	X-2109-220-1	PANEL (SERVICE) ASSY, FRONT (RG590: E3)		168	1-831-789-21	CABLE, FLEXIBLE FLAT (13 CORE) (RG490: E2, E51, MX/ RG590: E2, E51, MX, AR)	
157	X-2109-221-1	PANEL (SERVICE) ASSY, FRONT (RG590: E2, E51, AR)		169	4-235-777-01	BELT (FR)	
157	X-2109-222-1	PANEL (SERVICE) ASSY, FRONT (RG590: MX)		170	2-683-559-01	BELT (AF)	
158	1-417-656-21	MECHA DECK (CWN42FF609)		171	4-683-560-01	BELT (BF)	
159	4-951-620-01	SCREW (2.6X8), +BVTP					
160	4-231-825-01	CAM (B), HEART					

8-5. MAIN BOARD SECTION



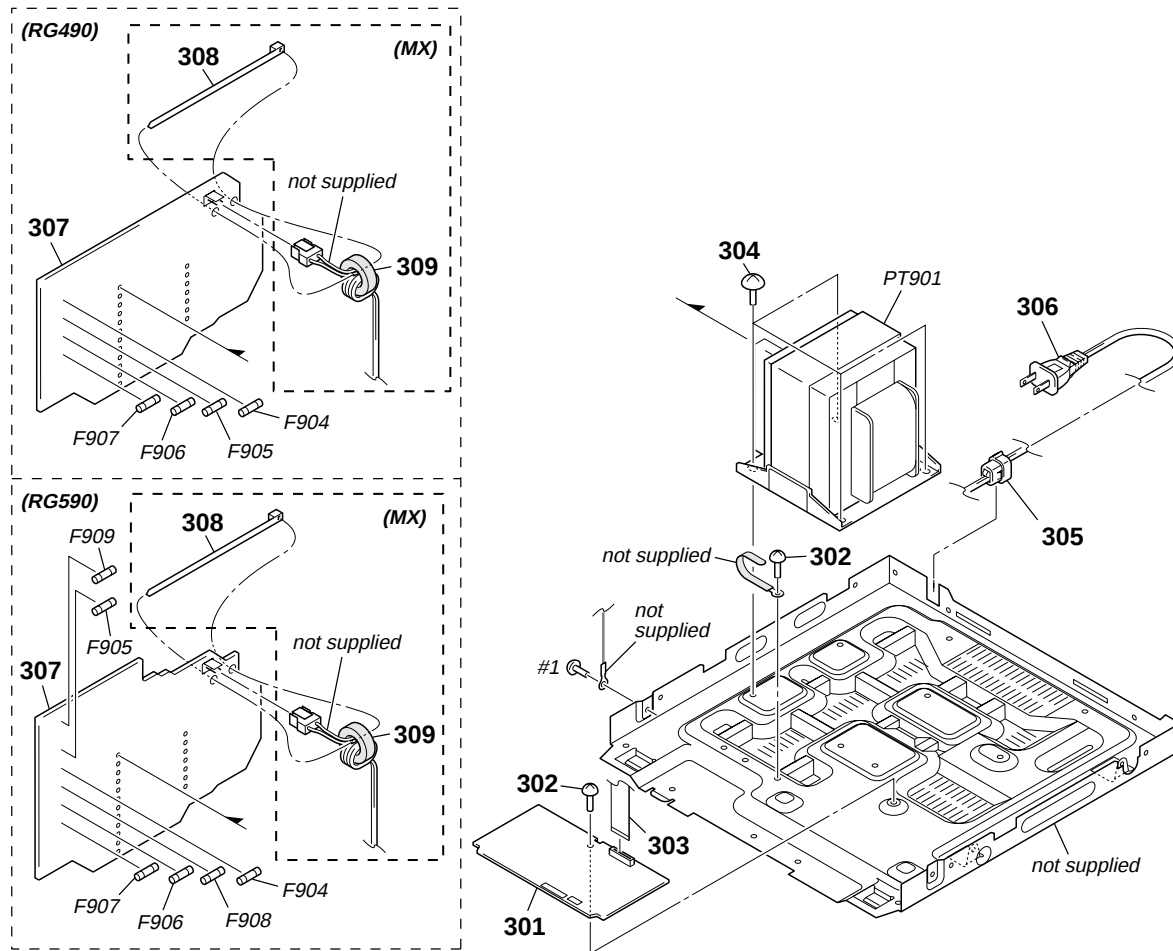
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	2-658-298-51	PANEL, BACK (RG590: UK, AR)		207	A-1159-747-A	MAIN BOARD, COMPLETE (RG590: MX)	
201	2-658-298-61	PANEL, BACK (RG490: E2, E3, E51/RG590: E2, E3, E51)		207	A-1163-193-A	MAIN BOARD, COMPLETE (RG490: E3)	
201	2-658-298-71	PANEL, BACK (RG490: MX/RG590: MX)		207	A-1163-195-A	MAIN BOARD, COMPLETE (RG490: E2, E51)	
202	3-254-143-11	SCREW (B3), (+) BV TAPPING		207	A-1163-196-A	MAIN BOARD, COMPLETE (RG490: MX)	
203	3-252-829-01	SCREW (B3), (+) BV TAPPING		208	1-831-771-21	CABLE, FLEXIBLE FLAT (23 CORE) (RG490: E2, E3, E51/RG590: UK, E2, E3, E51, AR)	
204	1-693-711-11	TUNER (FM/AM) (EXCEPT RG590: UK)		208	1-832-043-21	CABLE, FLEXIBLE FLAT (31 CORE) (RG490: MX/RG590: MX)	
204	1-693-712-11	TUNER (FM/AM) (RG590: UK)		209	3-077-331-01	+BV3 (3-CR)	
205	1-831-619-21	CABLE, FLEXIBLE FLAT (11 CORE) (RG590: UK)		210	2-666-281-01	SHEET (GROUND REAR) (RG590: UK)	
205	1-831-769-21	CABLE, FLEXIBLE FLAT (9 CORE) (EXCEPT RG590: UK)		M001	1-787-344-11	FAN, DC	
206	1-831-786-21	CABLE, FLEXIBLE FLAT (13 CORE)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
207	A-1159-743-A	MAIN BOARD, COMPLETE (RG590: UK)		#2	7-685-881-09	SCREW +BVTT 4X8 (S)	
207	A-1159-744-A	MAIN BOARD, COMPLETE (RG590: E3)					
207	A-1159-746-A	MAIN BOARD, COMPLETE (RG590: E2, E51, AR)					

8-6. POWER BOARD, SUB WOOFER BOARD SECTION



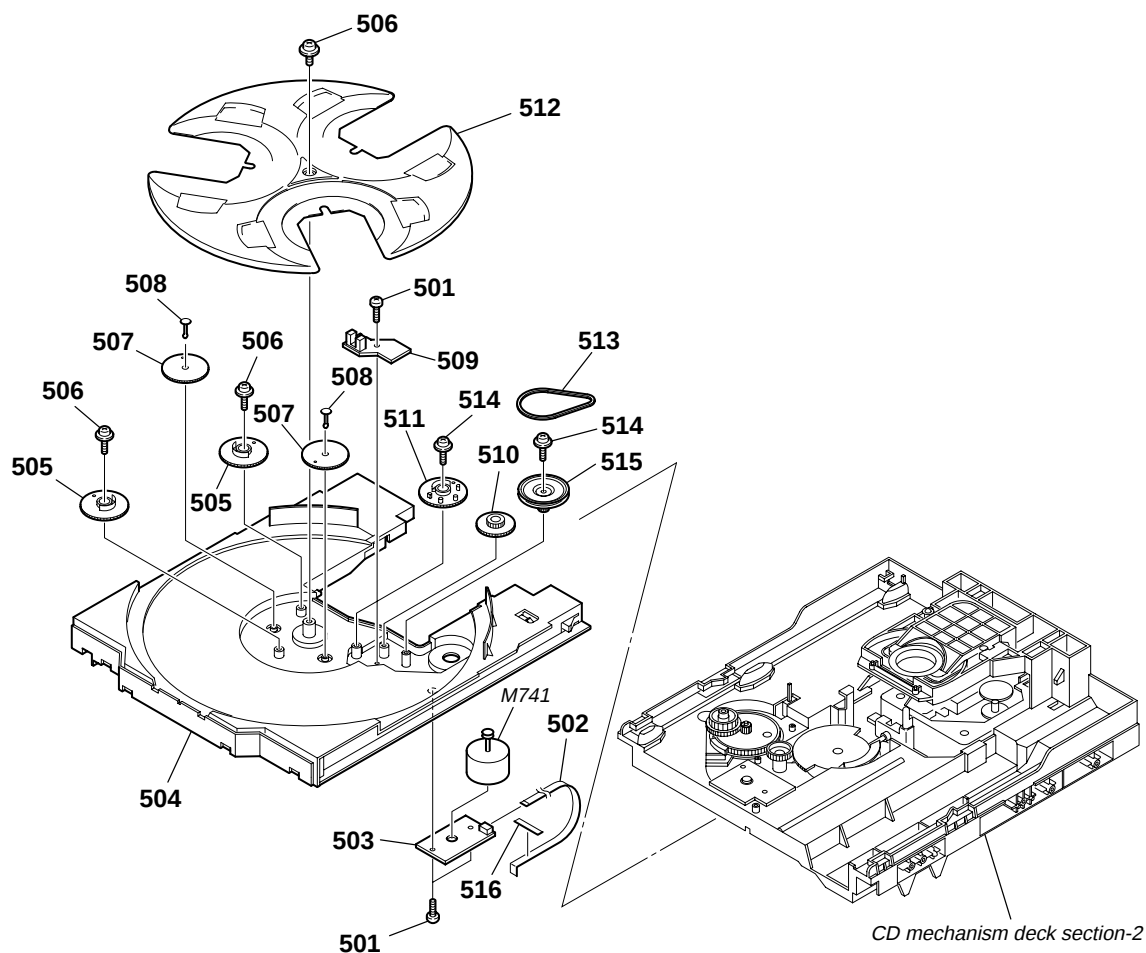
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	A-1159-779-A	POWER BOARD, COMPLETE (RG590: UK)		252	3-905-609-31	SCREW (TRANSISTOR)	
251	A-1159-780-A	POWER BOARD, COMPLETE (RG590: E3)		253	3-254-143-11	SCREW (B3), (+) BV TAPPING	
251	A-1159-781-A	POWER BOARD, COMPLETE (RG590: E2, E51, MX, AR)		254	A-1159-815-A	SUB WOOFER BOARD, COMPLETE (RG590)	
251	A-1163-225-A	POWER BOARD, COMPLETE (RG490: E3)		254	A-1178-854-A	SUB WOOFER BOARD, COMPLETE (RG490)	
251	A-1163-226-A	POWER BOARD, COMPLETE (RG490: E2, E51, MX)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

8-7. CHASSIS SECTION



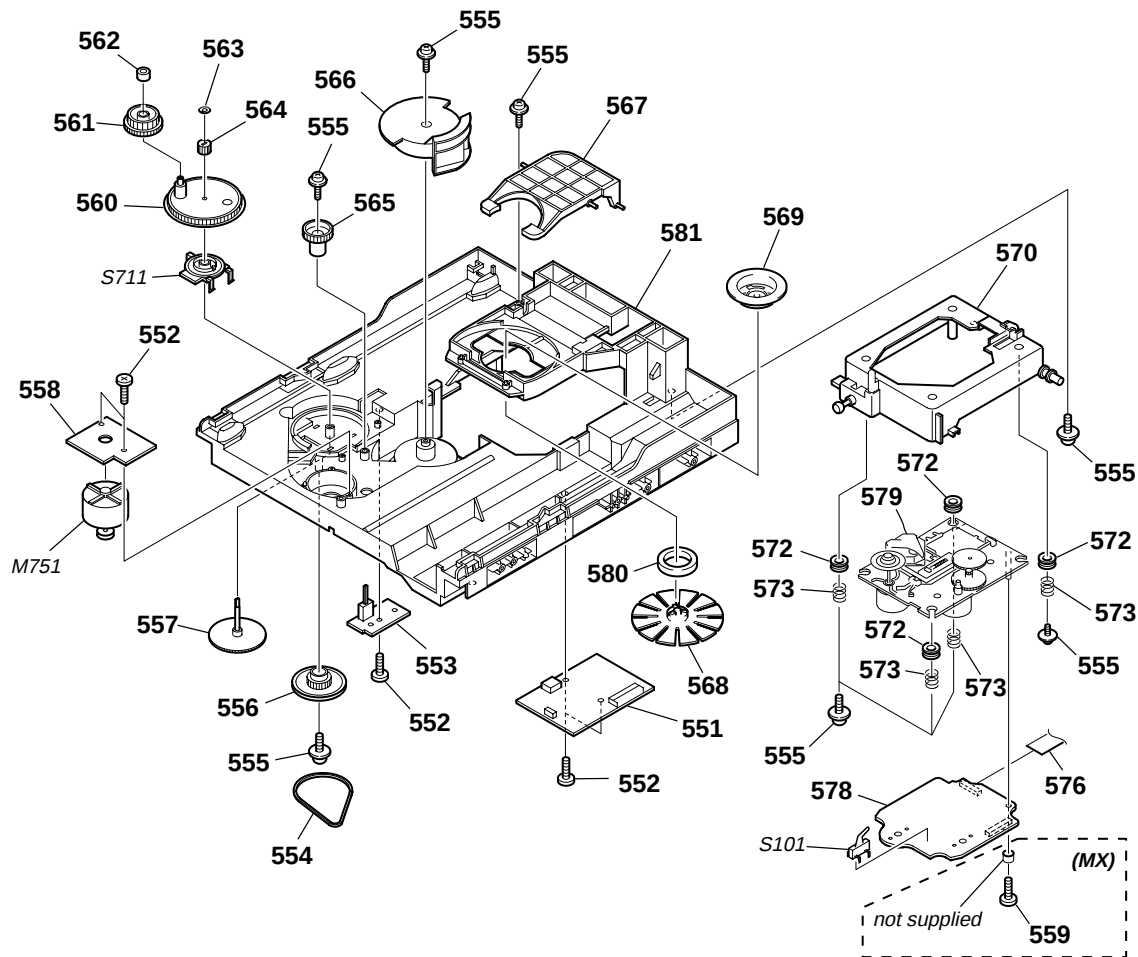
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	A-1171-482-A	DECK BOARD, COMPLETE		307	A-1163-247-A	TRANSFORMER BOARD, COMPLETE	
302	3-077-331-01	+BV3 (3-CR)					(RG490: MX)
303	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)		308	3-701-748-00	CLAMP (RG490: MX/RG590: MX)	
304	4-900-386-01	SCREW		309	1-500-868-11	CORE, FERRITE (RG490: MX/RG590: MX)	
305	3-703-244-00	BUSHING (2104), CORD		△ F904	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
		(RG490: E51/RG590: UK, E51, AR)		△ F904	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
* 305	3-703-571-12	BUSHING (S) (4516), CORD		△ F905	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
		(RG490: E2, E3, MX/RG590: E2, E3, MX)		△ F905	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
△ 306	1-769-744-81	CORD, POWER (RG590: UK)		△ F906	1-532-465-33	FUSE (T3.15AL/250V)	
△ 306	1-827-226-31	CORD, POWER		△ F907	1-532-465-33	FUSE (T3.15AL/250V)	
		(RG490: E2, E3, MX/RG590: E2, E3, MX)		△ F908	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
△ 306	1-829-387-11	CORD, POWER (RG590: AR)					
△ 306	1-830-188-11	CORD, POWER (RG490: E51/RG590: E51)		△ F909	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
307	A-1159-798-A	TRANSFORMER BOARD, COMPLETE		△ PT901	1-443-922-11	TRANSFORMER, POWER (RG590: UK)	
		(RG590: UK)		△ PT901	1-443-932-11	TRANSFORMER, POWER (RG490: MX)	
307	A-1159-799-A	TRANSFORMER BOARD, COMPLETE		△ PT901	1-443-933-11	TRANSFORMER, POWER (RG590: MX)	
		(RG590: E2, E3, E51)		△ PT901	1-443-935-11	TRANSFORMER, POWER	
307	A-1159-802-A	TRANSFORMER BOARD, COMPLETE					(RG590: E2, E3, E51, AR)
		(RG590: AR)					
307	A-1159-803-A	TRANSFORMER BOARD, COMPLETE					
		(RG590: MX)					
307	A-1163-243-A	TRANSFORMER BOARD, COMPLETE		△ PT901	1-443-937-11	TRANSFORMER, POWER (RG490: E2, E3, E51)	
		(RG490: E2, E3, E51)					

8-8. CD MECHANISM DECK SECTION-1
(CDM74KF-K6BD83S) (EXCEPT Mexican model)/
(CDM74KF-F1BD84) (Mexican model)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
501	4-218-253-62	SCREW (M2.6), +BTTP		510	4-243-820-01	GEAR (TABLE)	
502	1-828-938-51	WIRE (FLAT TYPE) (5 CORE)		511	4-243-819-01	GEAR (GENEVA)	
503	1-687-134-12	MOTOR (TB) BOARD		512	4-243-816-11	TRAY	
504	4-243-815-11	TABLE (LOADING)		513	4-243-823-11	BELT (TABLE)	
505	4-245-571-02	GEAR (STOPPER)		514	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
506	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		515	4-243-821-01	PULLEY (TABLE)	
507	4-245-570-01	GEAR (JOINT)		516	3-231-598-01	SHEET (BA)	
508	4-245-572-01	BUSHING (GEAR)		M741	A-1108-965-A	MOTOR ASSY, TABLE	
509	1-687-132-12	SENSOR BOARD					

8-9. CD MECHANISM DECK SECTION-2
(CDM74KF-K6BD83S) (EXCEPT Mexican model)/
(CDM74KF-F1BD84) (Mexican model)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
551	A-1103-756-B	DRIVER BOARD, COMPLETE		569	4-231-189-01	PULLEY (B), CHUCKING	
552	4-218-253-52	SCREW (M2.6), +BTTP		570	X-2055-190-1	HOLDER (213) ASSY	
553	1-687-669-12	SW BOARD		572	4-227-549-11	INSULATOR	
554	4-244-034-11	BELT (LOADING)		573	4-227-045-31	SPRING (INSULATOR), COIL	
555	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		576	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)	
556	4-225-844-01	GEAR (LOADING A)		578	A-1095-982-A	BD BOARD, COMPLETE (MX)	
557	4-224-613-11	GEAR (SHAFT)		578	A-1134-279-A	CD BOARD, COMPLETE (EXCEPT MX)	
558	1-687-133-12	MOTOR (LD) BOARD		△ 579	8-820-244-01	OPTICAL PICK-UP BLOCK (KSM-215DCP/C2NP) (MX)	
559	3-087-053-01	+BVTP2.6 (3CR) (MX)		△ 579	A-4735-357-A	OPTICAL PICK-UP BLOCK (KSM-213D) (EXCEPT MX)	
560	4-244-108-01	GEAR, SWING		580	1-471-035-21	MAGNET ASSY	
561	4-224-609-01	GEAR (LOADING C)		581	4-243-817-22	CHASSIS	
562	4-224-608-01	COLLAR, SWING		M751	A-1108-966-A	MOTOR ASSY, LOADING	
563	3-016-533-11	WASHER (FR), STOPPER		S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
564	4-224-611-01	GEAR (LOADING B)		S711	1-477-680-12	ENCODER, ROTARY (DISC TABLE ADDRESS DETECT)	
565	4-224-606-01	GEAR (RV)					
566	4-243-818-01	GEAR (U/D)					
567	4-243-822-02	LEVER (LIFTER)					
568	X-2102-809-1	PULLEY (KH) ASSY					

SECTION 9 ELECTRICAL PARTS LIST

BD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- Abbreviation
AR : Argentina model
E2 : 120V AC area in E model E51 : Chilean and Peruvian models
E3 : 240V AC area in E model MX : Mexican model
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA... : μ A... uPA... : μ PA...
uPB... : μ PB... uPC... : μ PC...
uPD... : μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark	
	A-1095-982-A	BD BOARD, COMPLETE (RG490: MX/RG590: MX)			C196	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
		*****			C201	1-128-995-21	ELECT CHIP 100uF 20%	10V	
		< CAPACITOR >			C203	1-128-995-21	ELECT CHIP 100uF 20%	10V	
C10	1-165-989-11	CERAMIC CHIP 10uF 10%	6.3V		C209	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	
C11	1-165-989-11	CERAMIC CHIP 10uF 10%	6.3V		C210	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	
C14	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C211	1-164-230-11	CERAMIC CHIP 220PF 5%	50V	
C15	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C212	1-162-919-11	CERAMIC CHIP 22PF 5%	50V	
C16	1-115-156-11	CERAMIC CHIP 1uF	10V		C213	1-162-919-11	CERAMIC CHIP 22PF 5%	50V	
C17	1-126-246-11	ELECT CHIP 220uF 20%	4V		C251	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V	
C18	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V		C252	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C111	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V		C255	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C112	1-162-962-11	CERAMIC CHIP 470PF 10%	50V		C257	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C113	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V		C258	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C114	1-162-962-11	CERAMIC CHIP 470PF 10%	50V		C259	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C115	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C260	1-128-394-11	ELECT CHIP 220uF 20%	10V	
C116	1-128-995-21	ELECT CHIP 100uF 20%	10V		C302	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C122	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V		C303	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C123	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V		C305	1-126-246-11	ELECT CHIP 220uF 20%	4V	
C124	1-162-959-11	CERAMIC CHIP 330PF 5%	50V		C306	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C125	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C307	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C131	1-162-927-11	CERAMIC CHIP 100PF 5%	50V		C308	1-126-208-21	ELECT CHIP 47uF 20%	4V	
C132	1-117-863-11	CERAMIC CHIP 0.47uF 10%	6.3V		C309	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C133	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V		C310	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C134	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C311	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C141	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V		C312	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C142	1-162-965-11	CERAMIC CHIP 0.0015uF 10%	50V		C313	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C143	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C314	1-126-208-21	ELECT CHIP 47uF 20%	4V	
C151	1-128-995-21	ELECT CHIP 100uF 20%	10V		C315	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	
C161	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C316	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	
C162	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C317	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	
C163	1-164-360-11	CERAMIC CHIP 0.1uF	16V		C318	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	
C171	1-162-919-11	CERAMIC CHIP 22PF 5%	50V		C320	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	
C172	1-162-920-11	CERAMIC CHIP 27PF 5%	50V				< CONNECTOR >		
C174	1-164-360-11	CERAMIC CHIP 0.1uF	16V		CN101	1-770-425-51	CONNECTOR, FFC/FPC 16P		
C181	1-164-360-11	CERAMIC CHIP 0.1uF	16V		CN201	1-784-879-51	CONNECTOR, FFC (LIF (NON-ZIF)) 31P		
C182	1-164-360-11	CERAMIC CHIP 0.1uF	16V				< FERRITE BEAD >		
C183	1-124-778-00	ELECT CHIP 22uF 20%	6.3V		FB301	1-500-445-21	FERRITE, EMI (SMD) (2012)		
C184	1-124-778-00	ELECT CHIP 22uF 20%	6.3V				< IC >		
C185	1-162-962-11	CERAMIC CHIP 470PF 10%	50V		IC101	8-752-425-12	IC CXD3059AR		
C186	1-162-962-11	CERAMIC CHIP 470PF 10%	50V						
C194	1-164-360-11	CERAMIC CHIP 0.1uF	16V						
C195	1-164-360-11	CERAMIC CHIP 0.1uF	16V						

HCD-RG490/RG590

BD CD

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
IC251	6-705-808-01	IC BA5947FM-E2					R407	1-216-809-11	METAL CHIP	100	5%	1/10W	
IC301	6-705-365-01	IC TC94A34FG-002					R408	1-216-809-11	METAL CHIP	100	5%	1/10W	
IC303	6-705-807-01	IC BH15FB1WG					R409	1-216-809-11	METAL CHIP	100	5%	1/10W	
< TRANSISTOR >							R410	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q10	6-551-120-01	TRANSISTOR	2SA2119K					R411	1-216-809-11	METAL CHIP	100	5%	1/10W
< RESISTOR/FERRITE BEAD >							R412	1-216-809-11	METAL CHIP	100	5%	1/10W	
R10	1-216-791-11	METAL CHIP	3.3	5%	1/10W		R419	1-216-809-11	METAL CHIP	100	5%	1/10W	
R11	1-216-864-11	SHORT CHIP	0					R421	1-216-809-11	METAL CHIP	100	5%	1/10W
R12	1-216-845-11	METAL CHIP	100K	5%	1/10W		R422	1-216-809-11	METAL CHIP	100	5%	1/10W	
R13	1-218-446-11	METAL CHIP	1	5%	1/10W		R423	1-216-809-11	METAL CHIP	100	5%	1/10W	
R111	1-216-821-11	METAL CHIP	1K	5%	1/10W		< VIBRATOR >						
R112	1-216-835-11	METAL CHIP	15K	5%	1/10W		X171	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)				
R113	1-216-821-11	METAL CHIP	1K	5%	1/10W		*****						
R114	1-216-835-11	METAL CHIP	15K	5%	1/10W		A-1134-279-A	CD BOARD, COMPLETE					
R121	1-216-835-11	METAL CHIP	15K	5%	1/10W		(EXCEPT RG490: MX/RG590: MX)						
R131	1-216-857-11	METAL CHIP	1M	5%	1/10W		*****						
R132	1-216-833-11	METAL CHIP	10K	5%	1/10W		< CAPACITOR >						
R133	1-216-848-11	METAL CHIP	180K	5%	1/10W		C101	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R141	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		C102	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R142	1-216-821-11	METAL CHIP	1K	5%	1/10W		C103	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R143	1-216-827-11	METAL CHIP	3.3K	5%	1/10W		C104	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R151	1-216-864-11	SHORT CHIP	0					C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
R161	1-216-809-11	METAL CHIP	100	5%	1/10W		C107	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R162	1-216-841-11	METAL CHIP	47K	5%	1/10W		C108	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R163	1-216-809-11	METAL CHIP	100	5%	1/10W		C109	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R165	1-216-864-11	SHORT CHIP	0					C110	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
R171	1-216-817-11	METAL CHIP	470	5%	1/10W		C111	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R172	1-216-857-11	METAL CHIP	1M	5%	1/10W		C112	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R173	1-216-295-00	SHORT CHIP	0					C113	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
R181	1-216-809-11	METAL CHIP	100	5%	1/10W		C201	1-128-995-21	ELECT CHIP	100uF	20%	10V	
R182	1-216-809-11	METAL CHIP	100	5%	1/10W		C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R191	1-216-864-11	SHORT CHIP	0					C203	1-128-995-21	ELECT CHIP	100uF	20%	10V
R201	1-500-445-21	FERRITE, EMI (SMD) (2012)					C204	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R203	1-216-864-11	SHORT CHIP	0					C205	1-164-360-11	CERAMIC CHIP	0.1uF		16V
R204	1-216-864-11	SHORT CHIP	0					C206	1-164-360-11	CERAMIC CHIP	0.1uF		16V
R205	1-216-864-11	SHORT CHIP	0					C207	1-128-995-21	ELECT CHIP	100uF	20%	10V
R251	1-216-833-11	METAL CHIP	10K	5%	1/10W		C208	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R252	1-216-837-11	METAL CHIP	22K	5%	1/10W		C210	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R253	1-216-833-11	METAL CHIP	10K	5%	1/10W		C213	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R301	1-216-845-11	METAL CHIP	100K	5%	1/10W		C214	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R302	1-216-833-11	METAL CHIP	10K	5%	1/10W		C215	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R303	1-216-845-11	METAL CHIP	100K	5%	1/10W		C217	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R305	1-216-845-11	METAL CHIP	100K	5%	1/10W		C218	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R306	1-216-864-11	SHORT CHIP	0					C219	1-164-360-11	CERAMIC CHIP	0.1uF		16V
R307	1-216-833-11	METAL CHIP	10K	5%	1/10W		C220	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R313	1-216-813-11	METAL CHIP	220	5%	1/10W		C221	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R351	1-216-809-11	METAL CHIP	100	5%	1/10W		C222	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R352	1-216-809-11	METAL CHIP	100	5%	1/10W		C223	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R353	1-216-809-11	METAL CHIP	100	5%	1/10W		C224	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R354	1-216-809-11	METAL CHIP	100	5%	1/10W		C226	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
R401	1-216-809-11	METAL CHIP	100	5%	1/10W		C227	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
R402	1-216-809-11	METAL CHIP	100	5%	1/10W		C230	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
R403	1-216-809-11	METAL CHIP	100	5%	1/10W		C232	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R404	1-216-809-11	METAL CHIP	100	5%	1/10W		C251	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
R405	1-216-809-11	METAL CHIP	100	5%	1/10W		C252	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
R406	1-216-809-11	METAL CHIP	100	5%	1/10W								

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C253	1-164-315-11	CERAMIC CHIP	470PF	5%	50V		R112	1-216-809-11	METAL CHIP	100	5%	1/10W	
C254	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		R113	1-216-809-11	METAL CHIP	100	5%	1/10W	
C256	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R201	1-216-295-00	SHORT CHIP	0			
C257	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R202	1-216-295-00	SHORT CHIP	0			
C258	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		R203	1-500-445-21	FERRITE, EMI (SMD) (2012)				
C260	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V								
C261	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R207	1-216-295-00	SHORT CHIP	0			
							R250	1-216-857-11	METAL CHIP	1M	5%	1/10W	
C264	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R252	1-216-833-11	METAL CHIP	10K	5%	1/10W	
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R253	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C266	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		R254	1-216-833-11	METAL CHIP	10K	5%	1/10W	
C267	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V								
C268	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		R255	1-216-821-11	METAL CHIP	1K	5%	1/10W	
							R256	1-216-837-11	METAL CHIP	22K	5%	1/10W	
C271	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R257	1-216-845-11	METAL CHIP	100K	5%	1/10W	
C272	1-164-360-11	CERAMIC CHIP	0.1uF		16V		R258	1-216-849-11	METAL CHIP	220K	5%	1/10W	
C273	1-164-315-11	CERAMIC CHIP	470PF	5%	50V		R260	1-216-864-11	SHORT CHIP	0			
C274	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C275	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		R265	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
							R266	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C276	1-165-908-11	CERAMIC CHIP	1uF	10%	10V		R267	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
C277	1-165-908-11	CERAMIC CHIP	1uF	10%	10V		R268	1-216-833-11	METAL CHIP	10K	5%	1/10W	
C291	1-164-315-11	CERAMIC CHIP	470PF	5%	50V		R270	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C292	1-164-315-11	CERAMIC CHIP	470PF	5%	50V								
C301	1-164-360-11	CERAMIC CHIP	0.1uF		16V		R271	1-216-857-11	METAL CHIP	1M	5%	1/10W	
							R275	1-216-809-11	METAL CHIP	100	5%	1/10W	
C303	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V		R276	1-216-841-11	METAL CHIP	47K	5%	1/10W	
C304	1-165-908-11	CERAMIC CHIP	1uF	10%	10V		R277	1-216-809-11	METAL CHIP	100	5%	1/10W	
C321	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R278	1-216-809-11	METAL CHIP	100	5%	1/10W	
C322	1-165-908-11	CERAMIC CHIP	1uF	10%	10V								
C323	1-128-995-21	ELECT CHIP	100uF	20%	10V		R280	1-216-864-11	SHORT CHIP	0			
							R291	1-216-809-11	METAL CHIP	100	5%	1/10W	
C401	1-128-394-11	ELECT CHIP	220uF	20%	10V		R292	1-216-809-11	METAL CHIP	100	5%	1/10W	
C404	1-164-360-11	CERAMIC CHIP	0.1uF		16V		R321	1-216-789-11	METAL CHIP	2.2	5%	1/10W	
C405	1-164-360-11	CERAMIC CHIP	0.1uF		16V		R322	1-216-789-11	METAL CHIP	2.2	5%	1/10W	
C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V								
C424	1-164-360-11	CERAMIC CHIP	0.1uF		16V		R323	1-216-864-11	SHORT CHIP	0			
							R324	1-216-845-11	METAL CHIP	100K	5%	1/10W	
C451	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R401	1-216-295-00	SHORT CHIP	0			
		< CONNECTOR >					R421	1-216-864-11	SHORT CHIP	0			
							R423	1-216-833-11	METAL CHIP	10K	5%	1/10W	
CN102	1-770-706-21	CONNECTOR, FFC/FPC 23P					R451	1-216-837-11	METAL CHIP	22K	5%	1/10W	
CN301	1-770-425-51	CONNECTOR, FFC/FPC 16P					R452	1-216-833-11	METAL CHIP	10K	5%	1/10W	
		< IC >							< VIBRATOR >				
IC201	8-753-246-30	IC CXD3014A-201R					X201	1-795-101-21	VIBRATOR, CERAMIC (16.9344MHz)				
IC203	6-709-050-01	IC BH18LB1WG-TR					*****						
IC402	6-705-808-01	IC BA5947FM-E2											
		< TRANSISTOR >					A-1159-964-A	CD-G BOARD, COMPLETE					
									(RG490: MX/RG590: MX)				

Q321	6-551-120-01	TRANSISTOR	2SA2119K						< CAPACITOR >				
		< RESISTOR/FERRITE BEAD >											
							C1001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R101	1-216-809-11	METAL CHIP	100	5%	1/10W		C1002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R102	1-216-809-11	METAL CHIP	100	5%	1/10W		C1003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R103	1-216-809-11	METAL CHIP	100	5%	1/10W		C1004	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R104	1-216-809-11	METAL CHIP	100	5%	1/10W		C1005	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R105	1-216-809-11	METAL CHIP	100	5%	1/10W								
							C1006	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R107	1-216-809-11	METAL CHIP	100	5%	1/10W		C1007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R108	1-216-809-11	METAL CHIP	100	5%	1/10W		C1008	1-126-193-11	ELECT CHIP	1uF	20%	50V	
R109	1-216-809-11	METAL CHIP	100	5%	1/10W		C1010	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
R110	1-216-809-11	METAL CHIP	100	5%	1/10W		C1011	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R111	1-216-809-11	METAL CHIP	100	5%	1/10W								

HCD-RG490/RG590

CD-G DECK

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C1012	1-126-205-11	ELECT CHIP	47uF	20%	6.3V		R1020	1-216-833-11	METAL CHIP	10K	5%	1/10W	
C1013	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		R1021	1-216-813-11	METAL CHIP	220	5%	1/10W	
C1014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R1022	1-216-813-11	METAL CHIP	220	5%	1/10W	
C1015	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R1023	1-216-813-11	METAL CHIP	220	5%	1/10W	
C1016	1-216-864-11	SHORT CHIP	0				R1029	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C1018	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		R1030	1-216-837-11	METAL CHIP	22K	5%	1/10W	
C1019	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		R1031	1-218-285-11	METAL CHIP	75	5%	1/10W	
C1022	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		R1032	1-216-833-11	METAL CHIP	10K	5%	1/10W	
C1023	1-126-193-11	ELECT CHIP	1uF	20%	50V		R1033	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
C1024	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		R1034	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
C1025	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R1035	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
C1026	1-110-530-11	ELECT CHIP	1000uF	20%	6.3V		R1036	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C1027	1-162-957-11	CERAMIC CHIP	220PF	5%	50V		R1037	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C1028	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		R1038	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C1029	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V		R1051	1-216-797-11	METAL CHIP	10	5%	1/10W	
C1030	1-124-778-00	ELECT CHIP	22uF	20%	6.3V		< VIBRATOR >						
C1031	1-126-193-11	ELECT CHIP	1uF	20%	50V		X1002	1-813-555-11	VIBRATOR, CRYSTAL (14.31818MHz)				
< CONNECTOR >						*****							
CN1001	1-779-416-11	CONNECTOR, FFC (LIF (NON-ZIF)) 13P					A-1171-482-A	DECK BOARD, COMPLETE					
CN1004	1-794-509-41	PIN, CONNECTOR (PC BOARD) (3P)					*****						
< JUMPER RESISTOR >						< CAPACITOR >							
FB1001	1-216-864-11	SHORT CHIP	0			C301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		
< IC >						C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		
IC1001	6-707-420-01	IC	TC9411AFG (BS, K)			C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		
IC1002	6-704-474-01	IC	MSM514400E-60TS-K			C304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		
IC1003	6-705-469-01	IC	BA50BC0FP-E2			C307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
IC1005	8-759-584-98	IC	SN74AHCT04NSR			C315	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		
IC1006	6-706-369-01	IC	NJM2561F1-TE2			C316	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		
< RESISTOR >						C317	1-126-964-11	ELECT	10uF	20%	50V		
JR1001	1-216-864-11	SHORT CHIP	0			C318	1-126-964-11	ELECT	10uF	20%	50V		
L1001	1-216-864-11	SHORT CHIP	0			C323	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		
L1002	1-216-797-11	METAL CHIP	10	5%	1/10W	C324	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		
< TRANSISTOR >						C325	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		
Q1001	8-729-027-59	TRANSISTOR	DTC144EKA-T146			C326	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		
Q1002	8-729-027-59	TRANSISTOR	DTC144EKA-T146			C327	1-162-960-11	CERAMIC CHIP	220PF	10%	50V		
Q1005	8-729-027-59	TRANSISTOR	DTC144EKA-T146			C328	1-162-960-11	CERAMIC CHIP	220PF	10%	50V		
Q1006	8-729-027-23	TRANSISTOR	DTA114EKA-T146			C329	1-136-161-00	MYLAR	0.047uF	5%	50V		
Q1007	8-729-027-59	TRANSISTOR	DTC144EKA-T146			C330	1-136-161-00	MYLAR	0.047uF	5%	50V		
Q1008	8-729-804-41	TRANSISTOR	2SB1122-S			C350	1-126-934-11	ELECT	220uF	20%	16V		
Q1009	8-729-027-23	TRANSISTOR	DTA114EKA-T146			C351	1-126-934-11	ELECT	220uF	20%	16V		
Q1010	8-729-027-59	TRANSISTOR	DTC144EKA-T146			C352	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
< RESISTOR >						C353	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
R1003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C354	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
R1004	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	C355	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
R1005	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	C356	1-126-964-11	ELECT	10uF	20%	50V		
R1006	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C401	1-126-956-11	ELECT	0.1uF	20%	50V		
R1011	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C402	1-126-956-11	ELECT	0.1uF	20%	50V		
R1012	1-216-833-11	METAL CHIP	10K	5%	1/10W	C403	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		
R1013	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		
R1015	1-216-809-11	METAL CHIP	100	5%	1/10W	C405	1-162-960-11	CERAMIC CHIP	220PF	10%	50V		
R1016	1-216-833-11	METAL CHIP	10K	5%	1/10W	C406	1-162-960-11	CERAMIC CHIP	220PF	10%	50V		
R1017	1-216-833-11	METAL CHIP	10K	5%	1/10W	C409	1-126-964-11	ELECT	10uF	20%	50V		
						C410	1-126-964-11	ELECT	10uF	20%	50V		
						C411	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		
						C412	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C413	1-162-960-11	CERAMIC CHIP 220PF 10%	50V	Q404	8-729-600-22	TRANSISTOR 2SA1235-F	
C414	1-162-960-11	CERAMIC CHIP 220PF 10%	50V	Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C415	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	Q406	8-729-600-22	TRANSISTOR 2SA1235-F	
C416	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	Q407	8-729-600-22	TRANSISTOR 2SA1235-F	
C417	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V	Q408	8-729-600-22	TRANSISTOR 2SA1235-F	
C418	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V	Q409	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
C430	1-164-156-11	CERAMIC CHIP 0.1uF	25V	Q410	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
C431	1-164-156-11	CERAMIC CHIP 0.1uF	25V	Q451	8-729-037-13	TRANSISTOR KTA1271Y	
C433	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	Q452	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C452	1-126-947-11	ELECT 47uF 20%	35V	Q453	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
C453	1-130-471-00	MYLAR 0.001uF 5%	50V	< RESISTOR >			
C454	1-130-479-00	MYLAR 0.0047uF 5%	50V	R301	1-216-841-11	METAL CHIP 47K 5%	1/10W
C456	1-130-483-00	MYLAR 0.01uF 5%	50V	R302	1-216-841-11	METAL CHIP 47K 5%	1/10W
C458	1-130-475-00	MYLAR 0.0022uF 5%	50V	R303	1-216-841-11	METAL CHIP 47K 5%	1/10W
C461	1-162-962-11	CERAMIC CHIP 470PF 10%	50V	R304	1-216-841-11	METAL CHIP 47K 5%	1/10W
C462	1-162-962-11	CERAMIC CHIP 470PF 10%	50V	R305	1-216-849-11	METAL CHIP 220K 5%	1/10W
< CONNECTOR >				R306	1-216-849-11	METAL CHIP 220K 5%	1/10W
CN008	1-568-830-11	CONNECTOR, FFC 11P		R307	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
CN301	1-815-444-11	PIN, CONNECTOR (PWB) 3P		R308	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
CN302	1-815-449-11	PIN, CONNECTOR (PWB) 8P		R309	1-216-817-11	METAL CHIP 470 5%	1/10W
< DIODE >				R310	1-216-817-11	METAL CHIP 470 5%	1/10W
D301	6-501-165-01	DIODE UDZW-TE17-4.3B		R311	1-216-813-11	METAL CHIP 220 5%	1/10W
D401	6-500-335-01	DIODE MC2838-T112-1		R312	1-216-813-11	METAL CHIP 220 5%	1/10W
< JUMPER RESISTOR >				R313	1-216-805-11	METAL CHIP 47 5%	1/10W
FB301	1-216-864-11	SHORT CHIP 0		R314	1-216-805-11	METAL CHIP 47 5%	1/10W
< IC >				R315	1-216-809-11	METAL CHIP 100 5%	1/10W
IC301	6-702-457-01	IC NJM14558M-TE2		R316	1-216-809-11	METAL CHIP 100 5%	1/10W
IC401	8-759-909-71	IC BA4558F		R317	1-216-853-11	METAL CHIP 470K 5%	1/10W
< JUMPER RESISTOR >				R318	1-216-853-11	METAL CHIP 470K 5%	1/10W
JR301	1-216-864-11	SHORT CHIP 0		R319	1-216-837-11	METAL CHIP 22K 5%	1/10W
JR302	1-216-864-11	SHORT CHIP 0		R320	1-216-837-11	METAL CHIP 22K 5%	1/10W
JR306	1-216-864-11	SHORT CHIP 0		R323	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
JR307	1-216-864-11	SHORT CHIP 0		R324	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
JR310	1-216-864-11	SHORT CHIP 0		R325	1-216-809-11	METAL CHIP 100 5%	1/10W
JR311	1-216-864-11	SHORT CHIP 0		R326	1-216-809-11	METAL CHIP 100 5%	1/10W
JR402	1-216-864-11	SHORT CHIP 0		R349	1-216-809-11	METAL CHIP 100 5%	1/10W
< TRANSFORMER >				R350	1-216-864-11	SHORT CHIP 0	
L451	1-443-760-11	TRANSFORMER, BIAS OSCILLATION		R351	1-216-821-11	METAL CHIP 1K 5%	1/10W
< TRANSISTOR >				R401	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q301	6-550-290-01	FET 2SJ460-T		R402	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q302	6-550-290-01	FET 2SJ460-T		R403	1-216-837-11	METAL CHIP 22K 5%	1/10W
Q303	6-550-290-01	FET 2SJ460-T		R404	1-216-837-11	METAL CHIP 22K 5%	1/10W
Q304	6-550-290-01	FET 2SJ460-T		R405	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q305	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R406	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q306	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R407	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
Q400	8-729-045-62	FET 2SK2158-T2B		R408	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
Q401	8-729-045-62	FET 2SK2158-T2B		R409	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q402	8-729-045-62	FET 2SK2158-T2B		R410	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q403	8-729-600-22	TRANSISTOR 2SA1235-F		R411	1-216-853-11	METAL CHIP 470K 5%	1/10W
				R412	1-216-853-11	METAL CHIP 470K 5%	1/10W
				R413	1-216-849-11	METAL CHIP 220K 5%	1/10W
				R414	1-216-849-11	METAL CHIP 220K 5%	1/10W
				R415	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
				R416	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
				R423	1-216-841-11	METAL CHIP 47K 5%	1/10W
				R424	1-216-841-11	METAL CHIP 47K 5%	1/10W
				R427	1-216-864-11	SHORT CHIP 0	

HCD-RG490/RG590

DECK DRIVER KEY LEFT

Ref. No.	Part No.	Description	Remark
R428	1-216-864-11	SHORT CHIP	0
R429	1-216-833-11	METAL CHIP	10K 5% 1/10W
R430	1-216-833-11	METAL CHIP	10K 5% 1/10W
R431	1-216-821-11	METAL CHIP	1K 5% 1/10W
R432	1-216-821-11	METAL CHIP	1K 5% 1/10W
R433	1-216-841-11	METAL CHIP	47K 5% 1/10W
R434	1-216-841-11	METAL CHIP	47K 5% 1/10W
R435	1-216-833-11	METAL CHIP	10K 5% 1/10W
R436	1-216-833-11	METAL CHIP	10K 5% 1/10W
R437	1-216-864-11	SHORT CHIP	0
R438	1-216-864-11	SHORT CHIP	0
R439	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R440	1-216-833-11	METAL CHIP	10K 5% 1/10W
R441	1-216-864-11	SHORT CHIP	0
R442	1-216-841-11	METAL CHIP	47K 5% 1/10W
R443	1-216-833-11	METAL CHIP	10K 5% 1/10W
R444	1-216-845-11	METAL CHIP	100K 5% 1/10W
R445	1-216-864-11	SHORT CHIP	0
R446	1-216-864-11	SHORT CHIP	0
R449	1-216-801-11	METAL CHIP	22 5% 1/10W
R450	1-216-801-11	METAL CHIP	22 5% 1/10W
R451	1-216-833-11	METAL CHIP	10K 5% 1/10W
R452	1-216-841-11	METAL CHIP	47K 5% 1/10W
R453	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R454	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R455	1-216-797-11	METAL CHIP	10 5% 1/10W
R456	1-216-801-11	METAL CHIP	22 5% 1/10W
R457	1-216-837-11	METAL CHIP	22K 5% 1/10W
R458	1-216-793-11	METAL CHIP	4.7 5% 1/10W
R459	1-216-864-11	SHORT CHIP	0
R460	1-216-864-11	SHORT CHIP	0
R461	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R462	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R463	1-216-821-11	METAL CHIP	1K 5% 1/10W
R464	1-216-821-11	METAL CHIP	1K 5% 1/10W
R465	1-216-864-11	SHORT CHIP	0
R466	1-216-864-11	SHORT CHIP	0
R481	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R482	1-216-841-11	METAL CHIP	47K 5% 1/10W
R483	1-216-837-11	METAL CHIP	22K 5% 1/10W
R484	1-216-837-11	METAL CHIP	22K 5% 1/10W
R485	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R488	1-216-837-11	METAL CHIP	22K 5% 1/10W
R489	1-216-837-11	METAL CHIP	22K 5% 1/10W
R490	1-216-829-11	METAL CHIP	4.7K 5% 1/10W

A-1103-756-B DRIVER BOARD, COMPLETE			

< CAPACITOR >			
C715	1-126-933-11	ELECT	100uF 20% 16V
C731	1-126-964-11	ELECT	10uF 20% 50V
C735	1-164-159-21	CERAMIC	0.1uF 50V
C736	1-164-159-21	CERAMIC	0.1uF 50V
C737	1-164-159-21	CERAMIC	0.1uF 50V
C741	1-162-306-11	CERAMIC	0.01uF 20% 16V
C751	1-162-306-11	CERAMIC	0.01uF 20% 16V

Ref. No.	Part No.	Description	Remark
C752	1-164-159-21	CERAMIC	0.1uF 50V
< CONNECTOR >			
CN701	1-784-735-11	CONNECTOR, FFC 13P	
CN702	1-784-766-11	CONNECTOR, FFC 5P	
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGRE) 2P	
< DIODE >			
D701	8-719-921-42	DIODE MTZJ-5.1A	
D711	8-719-109-69	DIODE RD3.6ESB2	
< IC >			
IC701	8-759-598-69	IC BA6956AN	
IC712	8-759-598-69	IC BA6956AN	
< TRANSISTOR >			
Q731	8-729-029-66	TRANSISTOR	DTC114ESA
< RESISTOR >			
R701	1-249-413-11	CARBON	470 5% 1/4W
R702	1-247-807-31	CARBON	100 5% 1/4W
R711	1-249-417-11	CARBON	1K 5% 1/4W
R712	1-249-425-11	CARBON	4.7K 5% 1/4W
R713	1-249-433-11	CARBON	22K 5% 1/4W
R721	1-249-425-11	CARBON	4.7K 5% 1/4W
R722	1-249-425-11	CARBON	4.7K 5% 1/4W
R723	1-249-425-11	CARBON	4.7K 5% 1/4W
R731	1-247-807-31	CARBON	100 5% 1/4W
R732	1-249-429-11	CARBON	10K 5% 1/4W
R733	1-249-417-11	CARBON	1K 5% 1/4W
R734	1-249-430-11	CARBON	12K 5% 1/4W
R736	1-249-412-11	CARBON	390 5% 1/4W
R751	1-249-425-11	CARBON	4.7K 5% 1/4W

A-1159-677-A KEY LEFT BOARD, COMPLETE			
(RG490: E2, E3, E51/RG590: UK)			
A-1159-678-A KEY LEFT BOARD, COMPLETE(RG590: E2, E51)			
A-1159-679-A KEY LEFT BOARD, COMPLETE (RG590: MX)			
A-1163-183-A KEY LEFT BOARD, COMPLETE (RG490: MX)			

< LED >			
D611	6-501-483-01	LED SLR-325VCT31P (STANDBY)	
D622	8-719-063-92	LED SLR325MC-M-T31-NP (SUBWOOFER)	
(RG490/RG590: UK)			
< RESISTOR >			
R626	1-216-821-11	METAL CHIP	1K 5% 1/10W
R639	1-216-821-11	METAL CHIP	1K 5% 1/10W
(RG490/RG590: UK)			
R640	1-216-821-11	METAL CHIP	1K 5% 1/10W
(RG490/RG590: UK)			
R652	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R653	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R654	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R655	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R656	1-216-833-11	METAL CHIP	10K 5% 1/10W

KEY LEFT

KEY RIGHT

KEY TOP

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R675	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	S637	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
R676	1-216-833-11	METAL CHIP	10K	5%	1/10W	S638	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
R677	1-216-837-11	METAL CHIP	22K	5%	1/10W	S672	1-786-418-11	SWITCH, ROTARY (ENCODER) (MULTI JOG)			
R678	1-216-841-11	METAL CHIP	47K	5%	1/10W	*****					
(RG490/RG590: UK)						A-1159-684-A	KEY TOP BOARD, COMPLETE				
< SWITCH >						(RG590: E2, E3, E51, AR)					
S601	1-762-875-21	SWITCH, KEYBOARD (I/⏻)				A-1159-685-A	KEY TOP BOARD, COMPLETE (RG590: MX)				
S602	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)				*****					
(EXCEPT RG490: MX/RG590: MX)						< LED >					
S602	1-762-875-21	SWITCH, KEYBOARD (KARAOKE)				D623	8-719-063-92	LED	SLR325MC-M-T31-NP (SUBWOOFER)		
(RG490: MX/RG590: MX)						< RESISTOR >					
S603	1-762-875-21	SWITCH, KEYBOARD (AUDIO IN)									
S604	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)									
< RESISTOR >						R658	1-216-821-11	METAL CHIP	1K	5%	1/10W
S605	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)				R659	1-216-821-11	METAL CHIP	1K	5%	1/10W
S606	1-762-875-21	SWITCH, KEYBOARD (CD)				R664	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
S625	1-762-875-21	SWITCH, KEYBOARD (ILLUMINATION)				R665	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
S626	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)				R666	1-216-833-11	METAL CHIP	10K	5%	1/10W
S627	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)									
< RESISTOR >						R667	1-216-837-11	METAL CHIP	22K	5%	1/10W
S628	1-762-875-21	SWITCH, KEYBOARD (SUBWOOFER)				R668	1-216-841-11	METAL CHIP	47K	5%	1/10W
(RG490/RG590: UK)						R692	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
*****						R693	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
A-1159-681-A	KEY RIGHT BOARD, COMPLETE					R694	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
(EXCEPT RG490: MX/RG590: MX)						R695	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
A-1159-682-A	KEY RIGHT BOARD, COMPLETE					R696	1-216-833-11	METAL CHIP	10K	5%	1/10W
(RG490: MX/RG590: MX)						R697	1-216-837-11	METAL CHIP	22K	5%	1/10W
*****						R698	1-216-841-11	METAL CHIP	47K	5%	1/10W
< CAPACITOR >						< SWITCH >					
C643	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	S614	1-762-875-21	SWITCH, KEYBOARD (CLEAR)			
C644	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	S615	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
< RESISTOR >						S616	1-762-875-21	SWITCH, KEYBOARD (SURROUND)			
R682	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	S617	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)			
R683	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	S618	1-762-875-21	SWITCH, KEYBOARD (SUBWOOFER)			
R684	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	S641	1-762-875-21	SWITCH, KEYBOARD (BASS)			
R685	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	S642	1-762-875-21	SWITCH, KEYBOARD (VOCAL)			
R686	1-216-833-11	METAL CHIP	10K	5%	1/10W	S643	1-762-875-21	SWITCH, KEYBOARD (GUITAR)			
< RESISTOR >						S644	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
R687	1-216-837-11	METAL CHIP	22K	5%	1/10W	S645	1-762-875-21	SWITCH, KEYBOARD (⬤)			
R688	1-216-841-11	METAL CHIP	47K	5%	1/10W	S646	1-762-875-21	SWITCH, KEYBOARD (+)			
< SWITCH >						S647	1-762-875-21	SWITCH, KEYBOARD (⬤)			
S624	1-762-875-21	SWITCH, KEYBOARD (ENTER)				S648	1-762-875-21	SWITCH, KEYBOARD (-)			
S631	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)				*****					
(RG490/RG590: UK)						A-1159-743-A	MAIN BOARD, COMPLETE (RG590: UK)				
S631	1-762-875-21	SWITCH, KEYBOARD (SLEEP)				A-1159-744-A	MAIN BOARD, COMPLETE (RG590: E3)				
(EXCEPT RG490/RG590: UK)						A-1159-746-A	MAIN BOARD, COMPLETE				
S632	1-762-875-21	SWITCH, KEYBOARD (SURROUND)				(RG590: E2, E51, AR)					
(RG490/RG590: UK)						A-1159-747-A	MAIN BOARD, COMPLETE (RG590: MX)				
S632	1-762-875-21	SWITCH, KEYBOARD (PLAY MODE/				A-1163-193-A	MAIN BOARD, COMPLETE (RG490: E3)				
TUNING MODE) (EXCEPT RG490/RG590: UK)						A-1163-195-A	MAIN BOARD, COMPLETE (RG490: E2, E51)				
S633	1-762-875-21	SWITCH, KEYBOARD (GROOVE)				A-1163-196-A	MAIN BOARD, COMPLETE (RG490: MX)				
(RG490/RG590: UK)						*****					
S633	1-762-875-21	SWITCH, KEYBOARD (REPEAT)				7-685-872-01	SCREW +BVT 3X8 (S)				
(EXCEPT RG490/RG590: UK)						< CAPACITOR >					
S634	1-762-875-21	SWITCH, KEYBOARD (⊕)				C001	1-136-165-00	FILM	0.1uF	5%	50V
S635	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)				C002	1-136-165-00	FILM	0.1uF	5%	50V
S636	1-762-875-21	SWITCH, KEYBOARD (DISC 3)									

HCD-RG490/RG590

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C006	1-126-964-11	ELECT	10uF 20% 50V	C141	1-126-964-11	ELECT	10uF 20% 50V
C007	1-126-965-11	ELECT	22uF 20% 50V	C142	1-126-964-11	ELECT	10uF 20% 50V
C008	1-126-943-11	ELECT	2200uF 20% 25V	C143	1-137-374-11	MYLAR	0.047uF 5% 50V
C010	1-165-621-11	CERAMIC CHIP	0.1uF 50V	C144	1-137-374-11	MYLAR	0.047uF 5% 50V
C011	1-136-165-00	FILM	0.1uF 5% 50V	C145	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C012	1-136-165-00	FILM	0.1uF 5% 50V	C146	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C013	1-126-943-11	ELECT	2200uF 20% 25V	C147	1-164-362-11	CERAMIC CHIP	470PF 5% 50V
C015	1-126-933-11	ELECT	100uF 20% 16V	C148	1-164-362-11	CERAMIC CHIP	470PF 5% 50V
C023	1-126-943-11	ELECT	2200uF 20% 25V	C149	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C025	1-126-933-11	ELECT	100uF 20% 16V	C150	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C026	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C151	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C027	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C152	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C031	1-216-864-11	SHORT CHIP	0	C153	1-126-960-11	ELECT	1uF 20% 50V
C032	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V (RG490: E3/RG590: UK, E3)	(RG490/RG590: UK)			
C033	1-126-933-11	ELECT	100uF 20% 16V	C154	1-126-960-11	ELECT	1uF 20% 50V
C034	1-126-963-11	ELECT	4.7uF 20% 50V	(RG490/RG590: UK)			
C035	1-126-947-11	ELECT	47uF 20% 35V	C155	1-136-167-00	MYLAR	0.15uF 5% 50V
C063	1-164-156-11	CERAMIC CHIP	0.1uF 25V	(RG490)			
C064	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C155	1-136-168-00	MYLAR	0.18uF 5% 50V
C065	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	(RG590)			
C066	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V (RG490: E3/RG590: UK, E3)	C156	1-136-167-00	MYLAR	0.15uF 5% 50V
C068	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	(RG490)			
C069	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C156	1-136-168-00	MYLAR	0.18uF 5% 50V
C109	1-126-964-11	ELECT	10uF 20% 50V	(RG590)			
C110	1-126-964-11	ELECT	10uF 20% 50V	C157	1-136-167-00	MYLAR	0.15uF 5% 50V
C111	1-126-965-11	ELECT	22uF 20% 50V	(RG490)			
C112	1-126-947-11	ELECT	47uF 20% 35V	C157	1-136-168-00	MYLAR	0.18uF 5% 50V
C114	1-164-360-11	CERAMIC CHIP	0.1uF 16V	(RG590)			
C115	1-126-933-11	ELECT	100uF 20% 16V	C158	1-136-167-00	MYLAR	0.15uF 5% 50V
C116	1-126-960-11	ELECT	1uF 20% 50V	(RG490)			
C117	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C158	1-136-168-00	MYLAR	0.18uF 5% 50V
C118	1-126-961-11	ELECT	2.2uF 20% 50V	(RG590)			
C119	1-126-961-11	ELECT	2.2uF 20% 50V	C159	1-162-960-11	CERAMIC CHIP	220PF 10% 50V
C120	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C160	1-162-960-11	CERAMIC CHIP	220PF 10% 50V
C121	1-126-933-11	ELECT	100uF 20% 16V	C163	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C122	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	(EXCEPT RG490/RG590: UK)			
C123	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C164	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C124	1-162-923-11	CERAMIC CHIP	47PF 5% 50V (RG590: UK)	(EXCEPT RG490/RG590: UK)			
C125	1-126-960-11	ELECT	1uF 20% 50V	C165	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C126	1-126-960-11	ELECT	1uF 20% 50V	(EXCEPT RG490/RG590: UK)			
C129	1-126-960-11	ELECT	1uF 20% 50V	C166	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C130	1-126-960-11	ELECT	1uF 20% 50V	(EXCEPT RG490/RG590: UK)			
C133	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG590: UK)	C167	1-104-665-11	ELECT	100uF 20% 25V
C134	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG590: UK)	(EXCEPT RG490/RG590: UK)			
C135	1-162-960-11	CERAMIC CHIP	220PF 10% 50V	C168	1-104-665-11	ELECT	100uF 20% 25V
C136	1-162-960-11	CERAMIC CHIP	220PF 10% 50V (RG590: UK)	(EXCEPT RG490/RG590: UK)			
C137	1-126-960-11	ELECT	1uF 20% 50V	C169	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C138	1-126-960-11	ELECT	1uF 20% 50V	(EXCEPT RG490/RG590: UK)			
C139	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C170	1-126-933-11	ELECT	100uF 20% 16V
C140	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	(EXCEPT RG490/RG590: UK)			
				C171	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
				(EXCEPT RG490/RG590: UK)			
				C172	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
				(EXCEPT RG490/RG590: UK)			
				C173	1-162-949-11	CERAMIC CHIP	47PF 5% 50V
				C174	1-162-949-11	CERAMIC CHIP	47PF 5% 50V
				C175	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
				(EXCEPT RG490/RG590: UK)			
				C176	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
				(EXCEPT RG490/RG590: UK)			

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C177	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C925	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
			(EXCEPT RG490/RG590: UK)						(RG590: UK)		
C178	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C926	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
			(EXCEPT RG490/RG590: UK)								
C253	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C927	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C254	1-162-923-11	CERAMIC CHIP	47PF	5%	50V			< CONNECTOR >			
C255	1-162-919-11	CERAMIC CHIP	22PF	5%	50V						
C256	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	* CN031	1-573-094-11	SOCKET, CONNECTOR 13P			
C257	1-126-947-11	ELECT	47uF	20%	35V	CN041	1-819-131-11	PIN, CONNECTOR 3P			
C258	1-126-947-11	ELECT	47uF	20%	35V	CN061	1-568-828-11	CONNECTOR, FFC 9P			
C259	1-126-964-11	ELECT	10uF	20%	50V				(RG490: E3/RG590: UK, E3)		
C260	1-124-261-00	ELECT	10uF	20%	25V	CN061	1-784-774-11	CONNECTOR, FFC 13P			
									(EXCEPT RG490: E3/RG590: UK, E3)		
C263	1-126-935-11	ELECT	470uF	20%	16V	CN091	1-568-828-11	CONNECTOR FFC 9P			
C264	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V						
C265	1-126-963-11	ELECT	4.7uF	20%	50V	CN201	1-568-830-11	CONNECTOR, FFC11P			
C266	1-126-963-11	ELECT	4.7uF	20%	50V	CN301	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P			
C267	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V				(EXCEPT RG490: MX/RG590: MX)		
C268	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	CN302	1-779-299-11	CONNECTOR, FFC (LIF (NON-ZIF)) 31P			
C271	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V				(RG490: MX/RG590: MX)		
C273	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	CN331	1-784-774-11	CONNECTOR, FFC 13P			
C274	1-124-261-00	ELECT	10uF	20%	25V				(RG490: MX/RG590: MX)		
C275	1-164-362-11	CERAMIC CHIP	470PF	5%	50V	CN991	1-784-780-11	CONNECTOR, FFC 19P			
								< DIODE >			
C276	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	D001	6-500-522-21	DIODE 10EDB40-TB3			
C278	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	D002	6-500-522-21	DIODE 10EDB40-TB3			
C281	1-162-974-11	CERAMIC CHIP	0.01uF		50V	D003	6-500-522-21	DIODE 10EDB40-TB3			
C305	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	D004	6-500-522-21	DIODE 10EDB40-TB3			
			(RG490: E3/RG590: UK, E3)			D006	8-719-988-61	DIODE 1SS355TE-17			
C317	1-126-926-11	ELECT	1000uF	20%	10V						
C333	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D007	6-501-166-01	DIODE UDZW-TE17-4.7B			
			(RG490: MX/RG590: MX)			D008	8-719-000-08	DIODE MC2838			
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D009	6-500-335-01	DIODE MC2838-T112-1			
			(RG490: MX/RG590: MX)			D011	6-500-522-21	DIODE 10EDB40-TB3			
C385	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D012	6-500-522-21	DIODE 10EDB40-TB3			
C386	1-162-927-11	CERAMIC CHIP	100PF	5%	50V						
C387	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	D013	6-500-522-21	DIODE 10EDB40-TB3			
C388	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D014	6-500-522-21	DIODE 10EDB40-TB3			
C391	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D021	6-500-522-21	DIODE 10EDB40-TB3			
C901	1-126-933-11	ELECT	100uF	20%	16V	D022	6-500-522-21	DIODE 10EDB40-TB3			
C902	1-126-964-11	ELECT	10uF	20%	50V	D023	6-500-522-21	DIODE 10EDB40-TB3			
C903	1-126-959-11	ELECT	0.47uF	20%	50V						
C904	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D024	6-500-522-21	DIODE 10EDB40-TB3			
C906	1-126-964-11	ELECT	10uF	20%	50V	D031	8-719-988-61	DIODE 1SS355TE-17			
C908	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D035	8-719-000-08	DIODE MC2838			
C909	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D036	8-719-000-07	DIODE MC2836			
C910	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D301	6-500-522-21	DIODE 10EDB40-TB3			
C911	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V						
C912	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D302	6-500-522-21	DIODE 10EDB40-TB3			
C913	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V	D303	6-501-166-01	DIODE UDZW-TE17-4.7B			
C914	1-162-919-11	CERAMIC CHIP	22PF	5%	50V				(RG490: MX/RG590: MX)		
C916	1-114-154-11	DOUBLE LAYER	47000uF		5.5V	D901	6-501-166-01	DIODE UDZW-TE17-4.7B			
C917	1-164-156-11	CERAMIC CHIP	0.1uF		25V	D902	8-719-000-07	DIODE MC2836			
C918	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	D905	8-719-988-61	DIODE 1SS355TE-17			
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V						
C920	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V	D910	8-719-988-61	DIODE 1SS355TE-17			
C921	1-126-961-11	ELECT	2.2uF	20%	50V	D921	6-500-848-01	DIODE MC2840-T112-1			
						D923	6-500-848-01	DIODE MC2840-T112-1			
C922	1-126-963-11	ELECT	4.7uF	20%	50V	D943	8-719-000-08	DIODE MC2838			
C923	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	D947	8-719-988-61	DIODE 1SS355TE-17			
C924	1-162-927-11	CERAMIC CHIP	100PF	5%	50V			< IC >			
			(RG590: UK)			IC006	6-702-771-01	IC TA78033LS			
						IC011	8-759-701-59	IC NJM78M09FA			
						IC021	8-759-701-59	IC NJM78M09FA			

HCD-RG490/RG590

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC101	6-709-331-01	IC R2S15207FP		Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC102	6-709-330-01	IC R2S15208SP (EXCEPT RG490/RG590: UK)		< RESISTOR >			
IC251	8-759-909-71	IC BA4558F		R001	1-216-801-11	METAL CHIP 22 5% 1/10W	
IC901	(Not supplied)	IC uPD78F0547GC (S)-UBT-A		R005	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
IC902	8-759-713-61	IC PST3429UL		R006	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
< JUMPER RESISTOR >				R010	1-216-837-11	METAL CHIP 22K 5% 1/10W	
JR101	1-216-864-11	SHORT CHIP 0	(RG490: E3/RG590: UK, E3)	R011	1-216-833-11	METAL CHIP 10K 5% 1/10W	
JR102	1-216-864-11	SHORT CHIP 0	(RG490: E3/RG590: UK, E3)	R013	1-216-837-11	METAL CHIP 22K 5% 1/10W	
JR103	1-216-864-11	SHORT CHIP 0		R014	1-216-833-11	METAL CHIP 10K 5% 1/10W	
JR104	1-216-864-11	SHORT CHIP 0		R016	1-216-845-11	METAL CHIP 100K 5% 1/10W	
JR105	1-216-864-11	SHORT CHIP 0		R032	1-216-821-11	METAL CHIP 1K 5% 1/10W	
JR106	1-216-864-11	SHORT CHIP 0		R033	1-216-837-11	METAL CHIP 22K 5% 1/10W	
JR107	1-216-864-11	SHORT CHIP 0		R034	1-216-837-11	METAL CHIP 22K 5% 1/10W	
JR108	1-216-864-11	SHORT CHIP 0		R035	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
JR109	1-216-864-11	SHORT CHIP 0		R036	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
JR110	1-216-864-11	SHORT CHIP 0		R037	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
JR111	1-216-864-11	SHORT CHIP 0		R039	1-260-308-11	CARBON 22 5% 1/2W	
JR112	1-216-864-11	SHORT CHIP 0		R041	1-216-864-11	SHORT CHIP 0	
JR113	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)		R042	1-216-833-11	METAL CHIP 10K 5% 1/10W	
JR114	1-216-864-11	SHORT CHIP 0		R043	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
JR115	1-216-864-11	SHORT CHIP 0		R045	1-216-821-11	METAL CHIP 1K 5% 1/10W	
JR116	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)		R046	1-216-793-11	METAL CHIP 4.7 5% 1/10W	
JR117	1-216-864-11	SHORT CHIP 0		R047	1-216-789-11	METAL CHIP 2.2 5% 1/10W	
JR118	1-216-864-11	SHORT CHIP 0		R048	1-216-801-11	METAL CHIP 22 5% 1/10W	
JR119	1-216-864-11	SHORT CHIP 0		R049	1-216-849-11	METAL CHIP 220K 5% 1/10W	
JR120	1-216-864-11	SHORT CHIP 0	(EXCEPT RG490: MX/RG590: MX)	R050	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
JR121	1-216-864-11	SHORT CHIP 0		R051	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
JR122	1-216-864-11	SHORT CHIP 0		R052	1-216-853-11	METAL CHIP 470K 5% 1/10W	
JR123	1-216-864-11	SHORT CHIP 0		R053	1-216-837-11	METAL CHIP 22K 5% 1/10W	
< TRANSISTOR >				R054	1-216-837-11	METAL CHIP 22K 5% 1/10W	
Q002	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R055	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
Q011	8-729-027-43	TRANSISTOR DTC114EKA-T146		R056	1-216-833-11	METAL CHIP 10K 5% 1/10W	
Q041	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R057	1-216-821-11	METAL CHIP 1K 5% 1/10W	
Q042	8-729-037-13	TRANSISTOR KTA1271Y		△ R059	1-215-892-11	METAL OXIDE 1K 5% 2W F	
Q043	8-729-037-03	TRANSISTOR KTA1266GR-AT		△ R060	1-215-892-11	METAL OXIDE 1K 5% 2W F	
Q044	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R061	1-216-797-11	METAL CHIP 10 5% 1/10W	
Q045	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R063	1-216-809-11	METAL CHIP 100 5% 1/10W	
Q046	8-729-045-62	FET 2SK2158-T2B		R064	1-216-809-11	METAL CHIP 100 5% 1/10W	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R068	1-216-797-11	METAL CHIP 10 5% 1/10W	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6		(EXCEPT RG490: E3/RG590: UK, E3)			
Q113	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R070	1-216-833-11	METAL CHIP 10K 5% 1/10W	
Q114	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R101	1-216-833-11	METAL CHIP 10K 5% 1/10W	
Q251	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R102	1-216-821-11	METAL CHIP 1K 5% 1/10W	
Q252	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R103	1-216-833-11	METAL CHIP 10K 5% 1/10W	
Q261	8-729-027-23	TRANSISTOR DTA114EKA-T146		R104	1-216-833-11	METAL CHIP 10K 5% 1/10W	
Q271	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R105	1-216-809-11	METAL CHIP 100 5% 1/10W	
Q272	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R106	1-216-821-11	METAL CHIP 1K 5% 1/10W	
Q274	6-551-276-01	TRANSISTOR RT1N431C-TP-1		(EXCEPT RG490: E3/RG590: UK, E3)			
Q276	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R108	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
Q277	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R109	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
Q901	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R110	1-216-841-11	METAL CHIP 47K 5% 1/10W	
Q902	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R111	1-216-845-11	METAL CHIP 100K 5% 1/10W	
Q903	8-729-037-13	TRANSISTOR KTA1271Y		R112	1-216-817-11	METAL CHIP 470 5% 1/10W	
				R113	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
				R114	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
				R116	1-216-809-11	METAL CHIP 100 5% 1/10W	
				R119	1-216-817-11	METAL CHIP 470 5% 1/10W	

Note: IC901 on the MAIN board cannot exchange with single.
When IC901 is damaged, exchange the entire mounted board.

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark	
R120	1-216-817-11	METAL CHIP	470	5%	1/10W	R166	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R121	1-216-809-11	METAL CHIP	100	5%	1/10W	R167	1-216-821-11	METAL CHIP	1K 5% 1/10W
R122	1-216-809-11	METAL CHIP	100	5%	1/10W	R168	1-216-821-11	METAL CHIP	1K 5% 1/10W
R123	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R171	1-216-864-11	SHORT CHIP	0
R124	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R172	1-216-864-11	SHORT CHIP	0
R125	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R175	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R126	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R176	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R127	1-216-821-11	METAL CHIP	1K	5%	1/10W	R177	1-216-864-11	SHORT CHIP	0
R127	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R178	1-216-864-11	SHORT CHIP	0
R128	1-216-821-11	METAL CHIP	1K	5%	1/10W	R201	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R128	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R202	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R129	1-216-841-11	METAL CHIP	47K	5%	1/10W	R250	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R129	1-216-853-11	METAL CHIP	470K	5%	1/10W	R250	1-216-833-11	METAL CHIP	10K 5% 1/10W
R130	1-216-841-11	METAL CHIP	47K	5%	1/10W	R251	1-216-817-11	METAL CHIP	470 5% 1/10W
R130	1-216-853-11	METAL CHIP	470K	5%	1/10W	R252	1-216-817-11	METAL CHIP	470 5% 1/10W
R131	1-216-809-11	METAL CHIP	100	5%	1/10W	R253	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R132	1-216-809-11	METAL CHIP	100	5%	1/10W	R253	1-216-833-11	METAL CHIP	10K 5% 1/10W
R133	1-216-864-11	SHORT CHIP	0			R254	1-216-826-11	METAL CHIP	2.7K 5% 1/10W
R134	1-216-864-11	SHORT CHIP	0			R254	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R135	1-216-833-11	METAL CHIP	10K	5%	1/10W	R257	1-216-826-11	METAL CHIP	2.7K 5% 1/10W
R136	1-216-833-11	METAL CHIP	10K	5%	1/10W	R257	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R137	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R261	1-216-833-11	METAL CHIP	10K 5% 1/10W
R138	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R262	1-216-833-11	METAL CHIP	10K 5% 1/10W
R139	1-216-821-11	METAL CHIP	1K	5%	1/10W	R263	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R140	1-216-821-11	METAL CHIP	1K	5%	1/10W	R264	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R141	1-216-837-11	METAL CHIP	22K	5%	1/10W	R265	1-216-809-11	METAL CHIP	100 5% 1/10W
R142	1-216-837-11	METAL CHIP	22K	5%	1/10W	R267	1-216-841-11	METAL CHIP	47K 5% 1/10W
R143	1-216-813-11	METAL CHIP	220	5%	1/10W	R268	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R144	1-216-813-11	METAL CHIP	220	5%	1/10W	R269	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R145	1-216-841-11	METAL CHIP	47K	5%	1/10W	R271	1-216-864-11	SHORT CHIP	0
R147	1-216-841-11	METAL CHIP	47K	5%	1/10W	R272	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R148	1-216-841-11	METAL CHIP	47K	5%	1/10W	R274	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R151	1-216-809-11	METAL CHIP	100	5%	1/10W	R276	1-216-833-11	METAL CHIP	10K 5% 1/10W
R152	1-216-809-11	METAL CHIP	100	5%	1/10W	R277	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R153	1-216-809-11	METAL CHIP	100	5%	1/10W	R279	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R154	1-216-857-11	METAL CHIP	1M	5%	1/10W	R280	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R155	1-216-849-11	METAL CHIP	220K	5%	1/10W	R281	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R156	1-216-849-11	METAL CHIP	220K	5%	1/10W	R283	1-216-833-11	METAL CHIP	10K 5% 1/10W
R157	1-216-849-11	METAL CHIP	220K	5%	1/10W	R285	1-216-833-11	METAL CHIP	10K 5% 1/10W
R158	1-216-849-11	METAL CHIP	220K	5%	1/10W	R286	1-216-837-11	METAL CHIP	22K 5% 1/10W
R159	1-216-841-11	METAL CHIP	47K	5%	1/10W	R287	1-216-853-11	METAL CHIP	470K 5% 1/10W
R160	1-216-841-11	METAL CHIP	47K	5%	1/10W	R289	1-216-845-11	METAL CHIP	100K 5% 1/10W
R161	1-216-837-11	METAL CHIP	22K	5%	1/10W	R290	1-216-821-11	METAL CHIP	1K 5% 1/10W
R162	1-216-837-11	METAL CHIP	22K	5%	1/10W	R291	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R163	1-216-841-11	METAL CHIP	47K	5%	1/10W	R292	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R164	1-216-841-11	METAL CHIP	47K	5%	1/10W	R315	1-216-809-11	METAL CHIP	100 5% 1/10W
R165	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R316	1-216-809-11	METAL CHIP	100 5% 1/10W
						R317	1-216-809-11	METAL CHIP	100 5% 1/10W
						R318	1-216-809-11	METAL CHIP	100 5% 1/10W
						R319	1-216-809-11	METAL CHIP	100 5% 1/10W

HCD-RG490/RG590

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R320	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R363	1-216-864-11	SHORT CHIP	0
R321	1-216-809-11	METAL CHIP	100 5% 1/10W	R364	1-216-864-11	SHORT CHIP	0
R322	1-216-809-11	METAL CHIP	100 5% 1/10W	R365	1-216-864-11	SHORT CHIP	0
R323	1-216-809-11	METAL CHIP	100 5% 1/10W	R366	1-216-864-11	SHORT CHIP	0
R324	1-216-809-11	METAL CHIP	100 5% 1/10W	R372	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)
R325	1-216-837-11	METAL CHIP	22K 5% 1/10W	R381	1-216-821-11	METAL CHIP	1K 5% 1/10W
R326	1-216-837-11	METAL CHIP	22K 5% 1/10W	R382	1-216-821-11	METAL CHIP	1K 5% 1/10W
R329	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R383	1-216-821-11	METAL CHIP	1K 5% 1/10W
R330	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG490: MX/RG590: MX)	R901	1-216-845-11	METAL CHIP	100K 5% 1/10W
R331	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R902	1-216-864-11	SHORT CHIP	0
R332	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R903	1-216-833-11	METAL CHIP	10K 5% 1/10W
R333	1-216-833-11	METAL CHIP	10K 5% 1/10W (RG490: MX/RG590: MX)	R904	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R334	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R905	1-216-833-11	METAL CHIP	10K 5% 1/10W
R335	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R907	1-216-841-11	METAL CHIP	47K 5% 1/10W
R336	1-216-833-11	METAL CHIP	10K 5% 1/10W (RG490: MX/RG590: MX)	R908	1-216-841-11	METAL CHIP	47K 5% 1/10W
R337	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R909	1-216-837-11	METAL CHIP	22K 5% 1/10W
R338	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)	R910	1-216-833-11	METAL CHIP	10K 5% 1/10W
R339	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG490: MX/RG590: MX)	R911	1-216-821-11	METAL CHIP	1K 5% 1/10W
R340	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG490: MX/RG590: MX)	R912	1-216-821-11	METAL CHIP	1K 5% 1/10W
R341	1-216-833-11	METAL CHIP	10K 5% 1/10W	R913	1-216-821-11	METAL CHIP	1K 5% 1/10W
R342	1-216-821-11	METAL CHIP	1K 5% 1/10W	R914	1-216-833-11	METAL CHIP	10K 5% 1/10W
R343	1-216-837-11	METAL CHIP	22K 5% 1/10W	R918	1-216-849-11	METAL CHIP	220K 5% 1/10W
R344	1-216-837-11	METAL CHIP	22K 5% 1/10W	R919	1-216-864-11	SHORT CHIP	0
R345	1-216-833-11	METAL CHIP	10K 5% 1/10W	R920	1-216-853-11	METAL CHIP	470K 5% 1/10W
R346	1-216-821-11	METAL CHIP	1K 5% 1/10W	R921	1-216-809-11	METAL CHIP	100 5% 1/10W
R347	1-216-837-11	METAL CHIP	22K 5% 1/10W	R922	1-216-849-11	METAL CHIP	220K 5% 1/10W
R348	1-216-837-11	METAL CHIP	22K 5% 1/10W	R923	1-216-809-11	METAL CHIP	100 5% 1/10W
R349	1-216-833-11	METAL CHIP	10K 5% 1/10W	R924	1-216-809-11	METAL CHIP	100 5% 1/10W
R350	1-216-833-11	METAL CHIP	10K 5% 1/10W (RG490: E2, E51, AR/RG590: E2, E51, AR)	R925	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)
R351	1-216-833-11	METAL CHIP	10K 5% 1/10W (RG490: E2, E51, AR/RG590: E2, E51, AR)	R925	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG590: UK)
R352	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG590: UK)	R932	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R352	1-216-833-11	METAL CHIP	10K 5% 1/10W (RG490: MX/RG590: MX)	R935	1-216-833-11	METAL CHIP	10K 5% 1/10W
R353	1-216-833-11	METAL CHIP	10K 5% 1/10W	R936	1-216-837-11	METAL CHIP	22K 5% 1/10W
R354	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG590)	R941	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R354	1-216-837-11	METAL CHIP	22K 5% 1/10W (RG490)	R942	1-216-833-11	METAL CHIP	10K 5% 1/10W
R355	1-216-825-11	METAL CHIP	2.2K 5% 1/10W (RG590: E2, E3, E51, MX, AR)	R943	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R355	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RG590: UK)	R944	1-216-849-11	METAL CHIP	220K 5% 1/10W
R355	1-216-837-11	METAL CHIP	22K 5% 1/10W (RG490)	R945	1-216-813-11	METAL CHIP	220 5% 1/10W
R356	1-216-857-11	METAL CHIP	1M 5% 1/10W (RG490/RG590: UK)	R946	1-216-864-11	SHORT CHIP	0
				R947	1-216-849-11	METAL CHIP	220K 5% 1/10W
				R948	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
				R949	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R950	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
				R951	1-216-813-11	METAL CHIP	220 5% 1/10W
				R952	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R953	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R955	1-216-821-11	METAL CHIP	1K 5% 1/10W
				R956	1-216-809-11	METAL CHIP	100 5% 1/10W
				R957	1-216-809-11	METAL CHIP	100 5% 1/10W
				R959	1-216-809-11	METAL CHIP	100 5% 1/10W
				R961	1-216-809-11	METAL CHIP	100 5% 1/10W (RG490: MX/RG590: MX)
				R961	1-216-821-11	METAL CHIP	1K 5% 1/10W (RG590: UK)
				R963	1-216-809-11	METAL CHIP	100 5% 1/10W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R965	1-216-809-11	METAL CHIP	100 5% 1/10W	C810	1-164-315-11	CERAMIC CHIP 470PF 5% 50V	
R967	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R968	1-216-809-11	METAL CHIP	100 5% 1/10W	C811	1-124-463-00	ELECT 0.1uF 20% 50V	
			(RG490: MX/RG590: MX)			(EXCEPT RG490: E3/RG590: UK, E3)	
R969	1-216-809-11	METAL CHIP	100 5% 1/10W	C813	1-125-972-11	ELECT 100uF 20% 16V	
R970	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R971	1-216-809-11	METAL CHIP	100 5% 1/10W	C814	1-124-257-00	ELECT 2.2uF 20% 50V	
R972	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R973	1-216-809-11	METAL CHIP	100 5% 1/10W	C815	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
						(EXCEPT RG490: E3/RG590: UK, E3)	
R974	1-216-809-11	METAL CHIP	100 5% 1/10W	C816	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
R975	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R976	1-216-809-11	METAL CHIP	100 5% 1/10W	C817	1-124-257-00	ELECT 2.2uF 20% 50V	
R977	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
			(RG490: MX/RG590: MX)	C818	1-126-157-11	ELECT 10uF 20% 16V	
R979	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R980	1-216-809-11	METAL CHIP	100 5% 1/10W	C819	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
R981	1-216-809-11	METAL CHIP	100 5% 1/10W			(EXCEPT RG490: E3/RG590: UK, E3)	
R982	1-216-817-11	METAL CHIP	470 5% 1/10W	C820	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
R996	1-216-809-11	METAL CHIP	100 5% 1/10W			(RG490: E3/RG590: UK, E3)	
R997	1-216-809-11	METAL CHIP	100 5% 1/10W	C821	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
						(RG490: E3/RG590: UK, E3)	
R999	1-216-809-11	METAL CHIP	100 5% 1/10W	C833	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
						(EXCEPT RG490: E3/RG590: UK, E3)	
		< VIBRATOR >		C851	1-126-160-11	ELECT 1uF 20% 50V	
X901	1-579-463-11	VIBRATOR, CRYSTAL (32.768kHz)				(RG490: MX/RG590: MX)	
X902	1-795-482-11	VIBRATOR, CERAMIC (16MHz)		C852	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
						(RG490: MX/RG590: MX)	
				C853	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
						(RG490: MX/RG590: MX)	
A-1159-739-A		MIC. AUX. HP BOARD, COMPLETE		C854	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
			(RG490: E3/RG590: UK, E3)			(RG490: MX/RG590: MX)	
A-1159-740-A		MIC. AUX. HP BOARD, COMPLETE		C856	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
			(RG490: E2, E51/RG590: E2, E51, AR)			(RG490: MX/RG590: MX)	
A-1159-741-A		MIC. AUX. HP BOARD, COMPLETE					
			(RG490: MX/RG590: MX)				
			*****	C857	1-124-465-00	ELECT 0.47uF 20% 50V	
						(RG490: MX/RG590: MX)	
		< CAPACITOR >		C858	1-124-465-00	ELECT 0.47uF 20% 50V	
						(RG490: MX/RG590: MX)	
C781	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		C859	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C781	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V		C861	1-126-160-11	ELECT 1uF 20% 50V	
		(RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C782	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		C862	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C782	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V					
		(RG490: E3/RG590: UK, E3)		C863	1-124-257-00	ELECT 2.2uF 20% 50V	
C783	1-165-621-11	CERAMIC CHIP 0.1uF 50V				(RG490: MX/RG590: MX)	
				C864	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C784	1-165-621-11	CERAMIC CHIP 0.1uF 50V				(RG490: MX/RG590: MX)	
C801	1-126-157-11	ELECT 10uF 20% 16V		C865	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C802	1-115-416-11	CERAMIC CHIP 0.001uF 5% 25V		C867	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C803	1-136-157-00	FILM 0.022uF 5% 50V		C868	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C805	1-136-157-00	FILM 0.022uF 5% 50V					
		(EXCEPT RG490: E3/RG590: UK, E3)		C869	1-124-589-11	ELECT 47uF 20% 16V	
						(RG490: MX/RG590: MX)	
C807	1-115-416-11	CERAMIC CHIP 0.001uF 5% 25V		C870	1-124-589-11	ELECT 47uF 20% 16V	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	
C808	1-164-230-11	CERAMIC CHIP 220PF 5% 50V					
		(EXCEPT RG490: E3/RG590: UK, E3)				< DIODE >	
C809	1-126-157-11	ELECT 10uF 20% 16V		D851	6-501-167-01	DIODE UDZW-TE17-5.1B	
		(EXCEPT RG490: E3/RG590: UK, E3)				(RG490: MX/RG590: MX)	

HCD-RG490/RG590

MIC. AUX. HP **MOTOR (LD)** **MOTOR (TB)**

Ref. No.	Part No.	Description	Remark
		< EARTH TERMINAL >	
* EP701	1-537-738-21	TERMINAL, EARTH	
* EP801	1-537-738-21	TERMINAL, EARTH (EXCEPT RG490: E3/RG590: UK, E3)	
		< IC >	
IC801	8-759-909-71	IC BA4558F (EXCEPT RG490: E3/RG590: UK, E3)	
IC802	8-759-496-41	IC M65850FP-E1 (RG490: MX/RG590: MX)	
		< JACK >	
J701	1-794-702-11	JACK, HEADPHONE (PHONES)	
J702	1-794-702-11	JACK, HEADPHONE AUDIO IN)	
JK801	1-816-573-11	JACK (MIC 1) (RG490: MX/RG590: MX)	
JK802	1-816-573-11	JACK (MIC) (RG490: E2, E51/RG590: E2, E51, AR)	
JK802	1-816-573-11	JACK (MIC 2) (RG490: MX/RG590: MX)	
		< JUMPER RESISTOR >	
JR801	1-216-864-11	SHORT CHIP 0 (RG490: E2, E51/RG590: E2, E51, AR)	
JR802	1-216-864-11	SHORT CHIP 0 (RG490: E2, E51/RG590: E2, E51, AR)	
		< TRANSISTOR >	
Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (EXCEPT RG490: E3/RG590: UK, E3)	
		< RESISTOR >	
R801	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (RG490: MX/RG590: MX)	
R802	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)	
R803	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R804	1-216-864-11	SHORT CHIP 0 (EXCEPT RG490: E3/RG590: UK, E3)	
R805	1-216-845-11	METAL CHIP 100K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R806	1-216-845-11	METAL CHIP 100K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R807	1-216-833-11	METAL CHIP 10K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R808	1-216-833-11	METAL CHIP 10K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R809	1-216-845-11	METAL CHIP 100K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R810	1-216-821-11	METAL CHIP 1K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R811	1-216-841-11	METAL CHIP 47K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R812	1-216-809-11	METAL CHIP 100 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R813	1-216-833-11	METAL CHIP 10K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R814	1-216-849-11	METAL CHIP 220K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R815	1-216-809-11	METAL CHIP 100 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	

Ref. No.	Part No.	Description	Remark
R816	1-216-845-11	METAL CHIP 100K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R817	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R818	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R819	1-216-853-11	METAL CHIP 470K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R820	1-216-837-11	METAL CHIP 22K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R821	1-216-833-11	METAL CHIP 10K 5% 1/10W (EXCEPT RG490: E3/RG590: UK, E3)	
R823	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R824	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R825	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R826	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R827	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R831	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R832	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R851	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R852	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R853	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R854	1-216-841-11	METAL CHIP 47K 5% 1/10W (RG490: MX/RG590: MX)	
R855	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R856	1-216-833-11	METAL CHIP 10K 5% 1/10W (RG490: MX/RG590: MX)	
R857	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R858	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R859	1-216-837-11	METAL CHIP 22K 5% 1/10W (RG490: MX/RG590: MX)	
R860	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG490: MX/RG590: MX)	
R861	1-216-817-11	METAL CHIP 470 5% 1/10W (RG490: MX/RG590: MX)	
R862	1-216-817-11	METAL CHIP 470 5% 1/10W (RG490: MX/RG590: MX)	
		< VARIABLE RESISTOR >	
VR801	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL) (EXCEPT RG490: E3/RG590: UK, E3)	
VR851	1-223-983-11	RES, VAR, CARBON 50K (ECHO LEVEL) (RG490: MX/RG590: MX)	

	1-687-133-12	MOTOR (LD) BOARD *****	

	1-687-134-12	MOTOR (TB) BOARD *****	
		< CONNECTOR >	
CN742	1-784-727-11	CONNECTOR, FFC 5P *****	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-1159-666-A	PANEL BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)		FL701	1-519-872-11	INDICATOR TUBE, FLUORESCENT (EXCEPT RG490/RG590: UK)	
	A-1159-667-A	PANEL BOARD, COMPLETE (RG590: E2, E3, E51, AR)				< IC >	
	A-1159-668-A	PANEL BOARD, COMPLETE (RG590: MX)		IC610	6-600-446-01	IC RPM7240-H18	
	A-1163-174-A	PANEL BOARD, COMPLETE (RG490: MX) *****		IC701	6-806-287-01	IC uPD780232GC-509-8BT-A	
	2-658-282-01	FL GUIDE				< JUMPER RESISTOR >	
		< CAPACITOR >		JR602	1-216-864-11	SHORT CHIP	0
C621	1-126-961-11	ELECT 2.2uF 20% 50V		JR603	1-216-864-11	SHORT CHIP	0
C622	1-126-961-11	ELECT 2.2uF 20% 50V		JR604	1-216-864-11	SHORT CHIP	0
C625	1-128-131-11	ELECT 22uF 20% 50V		JR605	1-216-864-11	SHORT CHIP	0
C631	1-126-947-11	ELECT 47uF 20% 35V		JR606	1-216-864-11	SHORT CHIP	0
C641	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		JR607	1-216-864-11	SHORT CHIP	0
C642	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		JR608	1-216-864-11	SHORT CHIP	0
C701	1-164-156-11	CERAMIC CHIP 0.1uF 25V		JR609	1-216-864-11	SHORT CHIP	0
C702	1-126-947-11	ELECT 47uF 20% 35V		JR610	1-216-864-11	SHORT CHIP	0
C703	1-164-156-11	CERAMIC CHIP 0.1uF 25V		JR611	1-216-864-11	SHORT CHIP	0
C704	1-162-962-11	CERAMIC CHIP 470PF 10% 50V		JR612	1-216-864-11	SHORT CHIP	0
C705	1-162-962-11	CERAMIC CHIP 470PF 10% 50V		JR613	1-216-864-11	SHORT CHIP	0
C707	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V		JR614	1-216-864-11	SHORT CHIP	0
C708	1-164-156-11	CERAMIC CHIP 0.1uF 25V				< TRANSISTOR >	
C709	1-126-947-11	ELECT 47uF 20% 35V		Q601	8-729-120-28	TRANSISTOR	2SC1623-L5L6
C710	1-164-156-11	CERAMIC CHIP 0.1uF 25V		Q602	8-729-120-28	TRANSISTOR	2SC1623-L5L6
C711	1-165-621-11	CERAMIC CHIP 0.1uF 50V		Q603	8-729-120-28	TRANSISTOR	2SC1623-L5L6
C712	1-126-965-11	ELECT 22uF 20% 50V		Q604	8-729-120-28	TRANSISTOR	2SC1623-L5L6
		< CONNECTOR >		Q605	8-729-120-28	TRANSISTOR	2SC1623-L5L6
CN601	1-784-780-11	CONNECTOR, FFC 19P		Q621	8-729-120-28	TRANSISTOR	2SC1623-L5L6
* CN606	1-815-553-11	PIN, CONNECTOR (PWB) 5P (EXCEPT RG490/RG590: UK)		Q701	6-551-276-01	TRANSISTOR	RT1N431C-TP-1
		< DIODE >		Q702	6-551-276-01	TRANSISTOR	RT1N431C-TP-1
D601	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		Q703	6-551-276-01	TRANSISTOR	RT1N431C-TP-1
D601	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		Q704	8-729-040-76	TRANSISTOR	KTA1273-Y-AT
D602	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		Q705	8-729-037-13	TRANSISTOR	KTA1271Y
D602	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		Q706	8-729-037-13	TRANSISTOR	KTA1271Y
D603	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)				< RESISTOR >	
D603	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R601	1-216-821-11	METAL CHIP	1K 5% 1/10W
D604	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R602	1-216-821-11	METAL CHIP	1K 5% 1/10W
D604	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R603	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R604	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R605	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R607	1-216-833-11	METAL CHIP	10K 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R608	1-216-833-11	METAL CHIP	10K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R609	1-216-809-11	METAL CHIP	100 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R610	1-216-845-11	METAL CHIP	100K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R611	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R612	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R613	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R614	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-451-01	LED 1L4344B22COC DT02 (STREAM) (EXCEPT RG490/RG590: UK)		R615	1-216-821-11	METAL CHIP	1K 5% 1/10W
D605	6-501-452-01	LED 1L4345V22DOT DT02 (STREAM) (RG490/RG590: UK)		R617	1-216-833-11	METAL CHIP	10K 5% 1/10W
D711	8-719-000-07	DIODE MC2836		R618	1-216-833-11	METAL CHIP	10K 5% 1/10W
		< FLUORESCENT INDICATOR >		R627	1-216-809-11	METAL CHIP	100 5% 1/10W
FL701	1-519-871-11	INDICATOR TUBE, FLUORESCENT (RG490/RG590: UK)		R628	1-216-805-11	METAL CHIP	47 5% 1/10W
				R629	1-216-809-11	METAL CHIP	100 5% 1/10W
				R631	1-216-833-11	METAL CHIP	10K 5% 1/10W

HCD-RG490/RG590

PANEL POWER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R632	1-216-833-11	METAL CHIP	10K 5% 1/10W	R775	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R633	1-216-833-11	METAL CHIP	10K 5% 1/10W	R776	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R634	1-216-833-11	METAL CHIP	10K 5% 1/10W			< SWITCH >	
R635	1-216-833-11	METAL CHIP	10K 5% 1/10W	S611	1-762-875-21	SWITCH, KEYBOARD (▶▶, SELECT FOLDER +)	
R647	1-216-833-11	METAL CHIP	10K 5% 1/10W	S612	1-762-875-21	SWITCH, KEYBOARD (▶▶I, TUNING +)	
				S613	1-762-875-21	SWITCH, KEYBOARD (▶▶II)	
R650	1-216-837-11	METAL CHIP	22K 5% 1/10W	S621	1-762-875-21	SWITCH, KEYBOARD (◀◀, SELECT FOLDER -)	
R651	1-216-841-11	METAL CHIP	47K 5% 1/10W	S622	1-762-875-21	SWITCH, KEYBOARD (II◀◀I, TUNING -)	
R660	1-216-837-11	METAL CHIP	22K 5% 1/10W			< VIBRATOR >	
R661	1-216-841-11	METAL CHIP	47K 5% 1/10W	S623	1-762-875-21	SWITCH, KEYBOARD (■)	
R662	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	S671	1-479-670-11	ENCODER, ROTARY (VOLUME)	
						< VIBRATOR >	
R663	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	X701	1-795-054-21	VIBRATOR, CERAMIC (4.19MHz)	
R670	1-216-837-11	METAL CHIP	22K 5% 1/10W			*****	
R671	1-216-841-11	METAL CHIP	47K 5% 1/10W			A-1159-779-A	POWER BOARD, COMPLETE (RG590: UK)
R672	1-216-825-11	METAL CHIP	2.2K 5% 1/10W			A-1159-780-A	POWER BOARD, COMPLETE (RG590: E3)
R673	1-216-825-11	METAL CHIP	2.2K 5% 1/10W			A-1159-781-A	POWER BOARD, COMPLETE
							(RG590: E2, E51, MX, AR)
R674	1-216-829-11	METAL CHIP	4.7K 5% 1/10W			A-1163-225-A	POWER BOARD, COMPLETE (RG490: E3)
R680	1-216-837-11	METAL CHIP	22K 5% 1/10W			A-1163-226-A	POWER BOARD, COMPLETE
R681	1-216-841-11	METAL CHIP	47K 5% 1/10W				(RG490: E2, E51, MX)
R690	1-216-833-11	METAL CHIP	10K 5% 1/10W				*****
R690	1-216-837-11	METAL CHIP	22K 5% 1/10W			7-685-872-01	SCREW +BVTT 3X8 (S)
							< CAPACITOR >
R691	1-216-841-11	METAL CHIP	47K 5% 1/10W	C402	1-107-726-91	CERAMIC CHIP 0.01uF 10% 16V	
							(RG590)
				C403	1-137-749-11	MYLAR 0.1uF 100V	
R701	1-216-864-11	SHORT CHIP	0	C404	1-137-749-11	MYLAR 0.1uF 100V	
R702	1-216-813-11	METAL CHIP	220 5% 1/10W	C405	1-135-928-21	ELECT 2200uF 20% 63V	
R703	1-216-809-11	METAL CHIP	100 5% 1/10W				(RG490: E3)
R704	1-216-864-11	SHORT CHIP	0	C405	1-137-840-11	ELECT 2200uF 20% 63V	
							(RG490: E2, E51, MX)
R705	1-216-809-11	METAL CHIP	100 5% 1/10W				
R706	1-216-809-11	METAL CHIP	100 5% 1/10W	C405	1-137-841-11	ELECT 2200uF 20% 71V	
R707	1-216-809-11	METAL CHIP	100 5% 1/10W				(RG590: E2, E51, MX, AR)
R708	1-216-809-11	METAL CHIP	100 5% 1/10W	C405	1-137-847-21	ELECT 2200uF 20% 71V	
R709	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				(RG590: UK, E3)
				C406	1-135-928-21	ELECT 2200uF 20% 63V	
R710	1-216-821-11	METAL CHIP	1K 5% 1/10W				(RG490: E3)
R711	1-216-821-11	METAL CHIP	1K 5% 1/10W	C406	1-137-840-11	ELECT 2200uF 20% 63V	
R712	1-216-821-11	METAL CHIP	1K 5% 1/10W				(RG490: E2, E51, MX)
R713	1-216-821-11	METAL CHIP	1K 5% 1/10W	C406	1-137-841-11	ELECT 2200uF 20% 71V	
							(RG590: E2, E51, MX, AR)
R713	1-216-864-11	SHORT CHIP	0 (RG490/RG590: UK)	C406	1-137-847-21	ELECT 2200uF 20% 71V	
							(RG590: UK, E3)
R715	1-216-809-11	METAL CHIP	100 5% 1/10W	C409	1-127-811-11	ELECT 3300uF 20% 50V	
R716	1-216-809-11	METAL CHIP	100 5% 1/10W				(RG590: E2, E51, MX, AR)
R717	1-216-809-11	METAL CHIP	100 5% 1/10W	C409	1-135-515-21	ELECT 3300uF 20% 50V	
R718	1-216-809-11	METAL CHIP	100 5% 1/10W				(RG590: UK, E3)
R719	1-216-809-11	METAL CHIP	100 5% 1/10W	C410	1-127-811-11	ELECT 3300uF 20% 50V	
							(RG590: E2, E51, MX, AR)
R741	1-216-801-11	METAL CHIP	22 5% 1/10W	C410	1-135-515-21	ELECT 3300uF 20% 50V	
R742	1-216-801-11	METAL CHIP	22 5% 1/10W				(RG590: UK, E3)
R743	1-216-837-11	METAL CHIP	22K 5% 1/10W	C411	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
R744	1-216-837-11	METAL CHIP	22K 5% 1/10W				(EXCEPT RG490/RG590: UK)
R745	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	C411	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
							(RG490/RG590: UK)
R746	1-216-829-11	METAL CHIP	4.7K 5% 1/10W				
R762	1-216-841-11	METAL CHIP	47K 5% 1/10W				
R763	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R764	1-216-841-11	METAL CHIP	47K 5% 1/10W				
R765	1-216-841-11	METAL CHIP	47K 5% 1/10W				
R766	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R771	1-216-821-11	METAL CHIP	1K 5% 1/10W				
R772	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R773	1-216-821-11	METAL CHIP	1K 5% 1/10W				
R774	1-216-833-11	METAL CHIP	10K 5% 1/10W				

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description	Remark
C413	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)	D441	8-719-000-07	DIODE MC2836	
C414	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)	D443	8-719-988-61	DIODE 1SS355TE-17	
C441	1-126-964-11	ELECT	10uF	20%	50V	D444	8-719-988-61	DIODE 1SS355TE-17 (RG590)	
C442	1-126-964-11	ELECT	10uF	20%	50V	D445	6-501-179-01	DIODE UDZW-TE17-16B (RG590)	
C443	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	D446	6-501-179-01	DIODE UDZW-TE17-16B (RG590)	
C444	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	D481	8-719-988-61	DIODE 1SS355TE-17	
C445	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D483	8-719-988-61	DIODE 1SS355TE-17 (RG490)	
C446	1-162-927-11	CERAMIC CHIP	100PF	5%	50V			< IC >	
C447	1-126-965-11	ELECT	22uF	20%	50V (RG490)	IC441	6-600-169-01	IC STK412-240M-E (RG590)	
C447	1-126-967-11	ELECT	47uF	20%	50V (RG590)	IC441	6-600-221-01	IC STK403-130-E (RG490)	
C448	1-126-965-11	ELECT	22uF	20%	50V (RG490)			< TERMINAL BOARD >	
C448	1-126-967-11	ELECT	47uF	20%	50V (RG590)	JK441	1-694-785-11	TERMINAL BOARD (SPEAKER)	
C451	1-136-165-00	FILM	0.1uF	5%	50V (RG490)			< COIL >	
C451	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)	L441	1-422-009-13	COIL, AIR-CORE	
C452	1-136-165-00	FILM	0.1uF	5%	50V (RG490)	L442	1-422-009-13	COIL, AIR-CORE	
C452	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)			< TRANSISTOR >	
C453	1-136-165-00	FILM	0.1uF	5%	50V (RG490)	Q441	6-551-268-01	TRANSISTOR 2SC5625	
C453	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)	Q442	6-551-268-01	TRANSISTOR 2SC5625	
C454	1-136-165-00	FILM	0.1uF	5%	50V (RG490)	Q481	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C454	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)	Q482	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C459	1-104-987-11	MYLAR	0.001uF	5%	200V (RG590: UK)	Q483	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C460	1-104-987-11	MYLAR	0.001uF	5%	200V (RG590: UK)	Q484	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C461	1-128-562-11	ELECT	47uF	20%	100V (RG590)	Q485	8-729-600-22	TRANSISTOR 2SA1235-F	
C462	1-128-562-11	ELECT	47uF	20%	100V (RG590)	Q486	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C463	1-104-655-91	ELECT	470uF	20%	6.3V (RG590)	Q487	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C481	1-104-665-11	ELECT	100uF	20%	25V	Q488	8-729-901-87	TRANSISTOR 2SC2411K-CQ	
C486	1-126-961-11	ELECT	2.2uF	20%	50V	Q489	6-551-268-01	TRANSISTOR 2SC5625	
C488	1-126-965-11	ELECT	22uF	20%	50V (RG490)	Q490	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RG590)	
C489	1-128-552-51	ELECT	47uF	20%	63V (RG490)	Q491	6-551-270-01	TRANSISTOR 2SA2026 (RG590)	
C490	1-128-576-11	ELECT	100uF	20%	63V (RG490)			< RESISTOR >	
C491	1-165-621-11	CERAMIC CHIP	0.1uF		50V (RG590: UK)	R401	1-216-845-11	METAL CHIP 100K 5% 1/10W	
		< CONNECTOR >				R402	1-216-845-11	METAL CHIP 100K 5% 1/10W	
* CN441	1-573-087-11	PIN, CONNECTOR 13P				R403	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
		< DIODE >				R404	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
D401	6-501-234-01	DIODE GBJ10DB9				R405	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
D402	6-501-234-01	DIODE GBJ10DB9 (RG590)				R406	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
						R407	1-216-809-11	METAL CHIP 100 5% 1/10W	
						R409	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
						R410	1-216-845-11	METAL CHIP 100K 5% 1/10W (RG590)	
						R411	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R412	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R413	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R414	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R415	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R416	1-216-797-11	METAL CHIP 10 5% 1/10W	
						R417	1-216-809-11	METAL CHIP 100 5% 1/10W	
						R418	1-216-809-11	METAL CHIP 100 5% 1/10W	

HCD-RG490/RG590

POWER

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R419	1-216-809-11	METAL CHIP	100	5%	1/10W	R470	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R420	1-216-797-11	METAL CHIP	10	5%	1/10W	R471	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R421	1-216-797-11	METAL CHIP	10	5%	1/10W	R472	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R422	1-216-797-11	METAL CHIP	10	5%	1/10W	R473	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R423	1-216-797-11	METAL CHIP	10	5%	1/10W	R474	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RG590)
R424	1-216-797-11	METAL CHIP	10	5%	1/10W	R475	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R425	1-216-797-11	METAL CHIP	10	5%	1/10W	R476	1-216-837-11	METAL CHIP	22K	5%	1/10W (RG590)
R434	1-216-864-11	SHORT CHIP	0 (RG490)			△ R477	1-212-881-11	FUSIBLE	100	5%	1/4W F (RG590)
R435	1-216-864-11	SHORT CHIP	0 (RG490)			R478	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R436	1-216-837-11	METAL CHIP	22K	5%	1/10W (RG590)	R479	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R439	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)	R480	1-216-845-11	METAL CHIP	100K	5%	1/10W
R440	1-216-837-11	METAL CHIP	22K	5%	1/10W	R481	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R441	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R482	1-216-833-11	METAL CHIP	10K	5%	1/10W
R442	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R483	1-216-801-11	METAL CHIP	22	5%	1/10W
R443	1-216-841-11	METAL CHIP	47K	5%	1/10W	R484	1-216-845-11	METAL CHIP	100K	5%	1/10W
R444	1-216-841-11	METAL CHIP	47K	5%	1/10W	R485	1-216-845-11	METAL CHIP	100K	5%	1/10W
R445	1-216-821-11	METAL CHIP	1K	5%	1/10W	R486	1-216-845-11	METAL CHIP	100K	5%	1/10W
R446	1-216-821-11	METAL CHIP	1K	5%	1/10W	R487	1-216-841-11	METAL CHIP	47K	5%	1/10W
R447	1-216-841-11	METAL CHIP	47K	5%	1/10W	R488	1-216-837-11	METAL CHIP	22K	5%	1/10W
R448	1-216-841-11	METAL CHIP	47K	5%	1/10W	R490	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
△ R449	1-212-974-00	FUSIBLE	47	5%	1/2W F (RG490)	R491	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG490)
△ R449	1-220-893-11	METAL	0.22	10%	5W F (RG590)	R491	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
△ R450	1-220-893-11	METAL	0.22	10%	5W F (RG590)	R492	1-216-821-11	METAL CHIP	1K	5%	1/10W (RG490)
△ R451	1-220-893-11	METAL	0.22	10%	5W F (RG490)	R492	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
△ R452	1-220-893-11	METAL	0.22	10%	5W F (RG490)	R493	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)
R453	1-216-797-11	METAL CHIP	10	5%	1/10W	R493	1-216-864-11	SHORT CHIP	0 (RG590)		
R454	1-216-797-11	METAL CHIP	10	5%	1/10W	R494	1-216-864-11	SHORT CHIP	0 (RG590)		
R455	1-216-821-11	METAL CHIP	1K	5%	1/10W	△ R495	1-202-972-61	FUSIBLE	1	5%	1/4W F
R456	1-216-821-11	METAL CHIP	1K	5%	1/10W	△ R496	1-212-881-11	FUSIBLE	100	5%	1/4W F
R457	1-216-837-11	METAL CHIP	22K	5%	1/10W	R497	1-216-845-11	METAL CHIP	100K	5%	1/10W
R458	1-216-837-11	METAL CHIP	22K	5%	1/10W	R498	1-216-821-11	METAL CHIP	1K	5%	1/10W
R459	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)	R499	1-216-821-11	METAL CHIP	1K	5%	1/10W
R459	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)	< RELAY >					
R460	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)	RY441	1-755-307-11	RELAY (RG490)			
R460	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)	RY441	1-755-372-11	RELAY (RG590)			
R461	1-216-797-11	METAL CHIP	10	5%	1/10W	< THERMISTOR >					
R462	1-216-797-11	METAL CHIP	10	5%	1/10W	TH441	1-807-796-11	THERMISTOR			
R463	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)	*****					
R464	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)						
R465	1-216-841-11	METAL CHIP	47K	5%	1/10W						
R466	1-216-845-11	METAL CHIP	100K	5%	1/10W						
△ R467	1-215-871-11	METAL OXIDE	2.2K	5%	1W F (RG590)						
△ R468	1-215-871-11	METAL OXIDE	2.2K	5%	1W F (RG590)						
R469	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)						

SENSOR

SUB WOOFER

SW

SW-SP

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-687-132-12	SENSOR BOARD *****				< RESISTOR >	
		< CONNECTOR >		R501	1-216-841-11	METAL CHIP 47K 5%	1/10W
				R502	1-216-841-11	METAL CHIP 47K 5%	1/10W
				R503	1-216-821-11	METAL CHIP 1K 5%	1/10W
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P		R504	1-216-841-11	METAL CHIP 47K 5%	1/10W
		< IC >		△ R505	1-215-873-00	METAL OXIDE 4.7K 5%	1W F
				(RG490)			
IC731	6-600-022-01	IC RPI-576		△ R505	1-215-896-00	METAL OXIDE 4.7K 5%	2W F
*****				(RG590)			
A-1159-815-A		SUB WOOFER BOARD, COMPLETE (RG590)		△ R506	1-202-972-61	FUSIBLE 1 5%	1/4W F
A-1178-854-A		SUB WOOFER BOARD, COMPLETE (RG490)		△ R507	1-215-873-00	METAL OXIDE 4.7K 5%	1W F
		*****		△ R508	1-215-873-00	METAL OXIDE 4.7K 5%	1W F
		< CAPACITOR >		△ R509	1-212-881-11	FUSIBLE 100 5%	1/4W F
C502	1-162-960-11	CERAMIC CHIP 220PF 10% 50V		△ R510	1-220-893-11	METAL 0.22 10%	5W F
C503	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V		△ R511	1-220-893-11	METAL 0.22 10%	5W F
C504	1-104-662-91	ELECT 22uF 20% 25V		R512	1-216-797-11	METAL CHIP 10 5%	1/10W
C505	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V		R513	1-216-821-11	METAL CHIP 1K 5%	1/10W
C506	1-104-665-11	ELECT 100uF 20% 25V		R514	1-216-837-11	METAL CHIP 22K 5%	1/10W
C507	1-126-967-11	ELECT 47uF 20% 50V		R515	1-216-841-11	METAL CHIP 47K 5%	1/10W
C508	1-164-230-11	CERAMIC CHIP 220PF 5% 50V		R516	1-216-809-11	METAL CHIP 100 5%	1/10W
C509	1-128-563-11	ELECT 100uF 20% 100V		R517	1-216-833-11	METAL CHIP 10K 5%	1/10W
C510	1-128-582-11	ELECT 10uF 20% 100V		R518	1-216-833-11	METAL CHIP 10K 5%	1/10W
C511	1-128-582-11	ELECT 10uF 20% 100V		R520	1-216-845-11	METAL CHIP 100K 5%	1/10W
C512	1-136-165-00	FILM 0.1uF 5% 50V		R521	1-216-809-11	METAL CHIP 100 5%	1/10W
C513	1-136-165-00	FILM 0.1uF 5% 50V		R522	1-216-809-11	METAL CHIP 100 5%	1/10W
C514	1-126-948-11	ELECT 100uF 20% 35V		R523	1-216-809-11	METAL CHIP 100 5%	1/10W
C516	1-126-964-11	ELECT 10uF 20% 50V		R524	1-216-841-11	METAL CHIP 47K 5%	1/10W
C517	1-126-964-11	ELECT 10uF 20% 50V		R525	1-216-797-11	METAL CHIP 10 5%	1/10W
		< CONNECTOR >		R526	1-216-797-11	METAL CHIP 10 5%	1/10W
CN501	1-815-444-11	PIN, CONNECTOR (PWB) 3P		R527	1-216-797-11	METAL CHIP 10 5%	1/10W
CN502	1-819-134-11	PIN, CONNECTOR 6P		R529	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
CN503	1-819-132-11	PIN, CONNECTOR 4P		R530	1-216-837-11	METAL CHIP 22K 5%	1/10W
		< DIODE >		R531	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
D501	6-501-176-01	DIODE UDZW-TE17-12B		R532	1-216-837-11	METAL CHIP 22K 5%	1/10W
D502	8-719-988-61	DIODE 1SS355TE-17		R533	1-216-837-11	METAL CHIP 22K 5%	1/10W
D503	8-719-988-61	DIODE 1SS355TE-17		△ R534	1-202-972-61	FUSIBLE 1 5%	1/4W F
D504	8-719-988-61	DIODE 1SS355TE-17				< RELAY >	
D507	8-719-988-61	DIODE 1SS355TE-17		RY501	1-755-307-11	RELAY	
		< IC >		*****			
IC501	6-600-091-01	IC STK404-130S			1-687-669-12	SW BOARD	
		< JUMPER RESISTOR >				*****	
JR501	1-216-864-11	SHORT CHIP 0				< SWITCH >	
JR502	1-216-864-11	SHORT CHIP 0		S751	1-786-514-31	SWITCH, LEVER (SLIDE)	
		< TRANSISTOR >				(DISC TABLE OPEN/CLOSE DETECT)	
Q501	6-551-268-01	TRANSISTOR 2SC5625		*****			
Q502	8-729-600-22	TRANSISTOR 2SA1235-F				SW-SP BOARD	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6				*****	
Q505	8-729-120-28	TRANSISTOR 2SC1623-L5L6				< TERMINAL BOARD >	
Q506	8-729-120-28	TRANSISTOR 2SC1623-L5L6		JK501	1-780-242-11	TERMINAL BOARD, PUSH (ANTENNA) 2P	
						(SUB WOOFER OUT)	
Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6		*****			

HCD-RG490/RG590

TRANSFORMER

VIDEO OUT

Ref. No.	Part No.	Description	Remark
	A-1159-798-A	TRANSFORMER BOARD, COMPLETE (RG590: UK)	
	A-1159-799-A	TRANSFORMER BOARD, COMPLETE (RG590: E2, E3, E51)	
	A-1159-802-A	TRANSFORMER BOARD, COMPLETE (RG590: AR)	
	A-1159-803-A	TRANSFORMER BOARD, COMPLETE (RG590: MX)	
	A-1163-243-A	TRANSFORMER BOARD, COMPLETE (RG490: E2, E3, E51)	
	A-1163-247-A	TRANSFORMER BOARD, COMPLETE (RG490: MX)	

	1-533-233-31	FUSE HOLDER	
		< CAPACITOR >	
C907	1-136-165-00	FILM 0.1uF 5% 50V (RG490)	
C907	1-130-495-00	MYLAR 0.1uF 5% 50V (RG590)	
C908	1-128-553-11	ELECT 220uF 20% 63V	
C909	1-126-964-11	ELECT 10uF 20% 50V	
C910	1-126-968-11	ELECT 100uF 20% 50V	
C911	1-126-942-61	ELECT 1000uF 20% 25V	
C914	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V (RG590)	
		< CONNECTOR >	
* CN901	1-793-660-11	PIN, CONNECTOR (PC BOARD) 3P	
CN903	1-819-131-11	PIN, CONNECTOR 3P (RG490)	
CN905	1-819-133-11	PIN, CONNECTOR 5P (RG590)	
CN907	1-819-139-11	PIN, CONNECTOR 11P	
		< DIODE >	
D901	8-719-988-61	DIODE 1SS355TE-17	
D902	6-500-522-21	DIODE 10EDB40-TB3	
D903	6-500-522-21	DIODE 10EDB40-TB3	
D904	6-500-522-21	DIODE 10EDB40-TB3	
D905	6-500-522-21	DIODE 10EDB40-TB3	
D906	6-501-184-01	DIODE UDZW-TE17-27B	
D908	6-500-522-21	DIODE 10EDB40-TB3	
D910	6-500-335-01	DIODE MC2838-T112-1 (RG590: AR)	
D910	8-719-000-08	DIODE MC2838 (EXCEPT RG590: AR)	
		< TRANSFORMER >	
△ PT902	1-443-927-11	TRANSFORMER, POWER (RG490: MX/RG590: MX)	
△ PT902	1-443-928-11	TRANSFORMER, POWER (EXCEPT RG490: MX/RG590: UK, MX)	
△ PT902	1-443-929-11	TRANSFORMER, POWER (RG590: UK)	
		< TRANSISTOR >	
Q902	8-729-048-66	TRANSISTOR 2SB1238-PQR-TV2	
		< RESISTOR >	
R903	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R904	1-216-821-11	METAL CHIP 1K 5% 1/10W	
△ R908	1-202-972-61	FUSIBLE 1 5% 1/4W F	
R910	1-216-801-11	METAL CHIP 22 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R910	1-216-864-11	SHORT CHIP (EXCEPT RG490: MX/RG590: MX) 0 (RG490: MX/RG590: MX)	
R911	1-216-864-11	SHORT CHIP 0	
R914	1-216-833-11	METAL CHIP 10K 5% 1/10W	
		< RELAY >	
△ RY901	1-755-276-11	RELAY, POWER (RG490: MX/RG590: MX)	
△ RY901	1-755-334-11	RELAY, AC POWER (EXCEPT RG490: MX/RG590: MX)	
		< SWITCH >	
△ S901	1-786-055-31	SELECTOR, VOLTAGE (VOLTAGE SELECTOR) (RG490: E2, E3, E51/RG590: E2, E3, E51)	

		VIDEO OUT BOARD (RG490: MX/RG590: MX) *****	
		< CAPACITOR >	
C803	1-100-566-91	CERAMIC CHIP 0.1uF 10% 25V	
		< JACK >	
J803	1-774-227-11	JACK, PIN 1P (VIDEO OUT)	

		MISCELLANEOUS *****	
5	1-828-975-21	WIRE (FLAT TYPE) (13 CORE) (RG490: MX/RG590: MX)	
61	1-831-952-21	CABLE, FLEXIBLE FLAT (19 CORE)	
62	1-831-779-21	CABLE, FLEXIBLE FLAT (11 CORE)	
158	1-417-656-21	MECHA DECK (CWN42FF609)	
168	1-831-772-21	CABLE, FLEXIBLE FLAT (9 CORE) (RG490: E3/RG590: UK, E3)	
168	1-831-789-21	CABLE, FLEXIBLE FLAT (13 CORE) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)	
204	1-693-711-11	TUNER (FM/AM) (EXCEPT RG590: UK)	
204	1-693-712-11	TUNER (FM/AM) (RG590: UK)	
205	1-831-619-21	CABLE, FLEXIBLE FLAT (11 CORE) (RG590: UK)	
205	1-831-769-21	CABLE, FLEXIBLE FLAT (9 CORE) (EXCEPT RG590: UK)	
206	1-831-786-21	CABLE, FLEXIBLE FLAT (13 CORE)	
208	1-831-771-21	CABLE, FLEXIBLE FLAT (23 CORE) (RG490: E2, E3, E51/RG590: UK, E2, E3, E51, AR)	
208	1-832-043-21	CABLE, FLEXIBLE FLAT (31 CORE) (RG490: MX/RG590: MX)	
303	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)	
△ 306	1-769-744-81	CORD, POWER (RG590: UK)	
△ 306	1-827-226-31	CORD, POWER (RG490: E2, E3, MX/ RG590: E2, E3, MX)	
△ 306	1-829-387-11	CORD, POWER (RG590: AR)	
△ 306	1-830-188-11	CORD, POWER (RG490: E51/RG590: E51)	
309	1-500-868-11	CORE, FERRITE (RG490: MX/RG590: MX)	
502	1-828-938-51	WIRE (FLAT TYPE) (5 CORE)	
576	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)	
△ 579	8-820-244-01	OPTICAL PICK-UP BLOCK (KSM-215DCP/C2NP) (MX)	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
△ 579	A-4735-357-A	OPTICAL PICK-UP BLOCK (KSM-213D)	(EXCEPT MX)
580	1-471-035-21	MAGNET ASSY	
△ F904	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
△ F904	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
△ F905	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
△ F905	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
△ F906	1-532-465-33	FUSE (T3.15AL/250V)	
△ F907	1-532-465-33	FUSE (T3.15AL/250V)	
△ F908	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
△ F909	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
M001	1-787-344-11	FAN, DC	
M741	A-1108-965-A	MOTOR ASSY, TABLE	
M751	A-1108-966-A	MOTOR ASSY, LOADING	
△ PT901	1-443-922-11	TRANSFORMER, POWER (RG590: UK)	
△ PT901	1-443-932-11	TRANSFORMER, POWER (RG490: MX)	
△ PT901	1-443-933-11	TRANSFORMER, POWER (RG590: MX)	
△ PT901	1-443-935-11	TRANSFORMER, POWER	(RG590: E2, E3, E51, AR)
△ PT901	1-443-937-11	TRANSFORMER, POWER (RG490: E2, E3, E51)	
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
S711	1-477-680-12	ENCODER, ROTARY	(DISC TABLE ADDRESS DETECT)

ACCESSORIES

△	1-569-007-12	ADAPTOR, CONVERSION 2P (E3)
△	1-569-008-32	ADAPTOR, CONVERSION 2P (E51)
△	1-770-019-61	ADAPTOR, CONVERSION PLUG (UK)

REVISION HISTORY

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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